

The
Psychology of Speech

Sara M. Stinchfield

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THE
PSYCHOLOGY OF SPEECH

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THE PSYCHOLOGY OF SPEECH

By

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1928

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TO MY MOTHER

and

DR. AND MRS. S. S. CURRY

whose early training gave to the writer

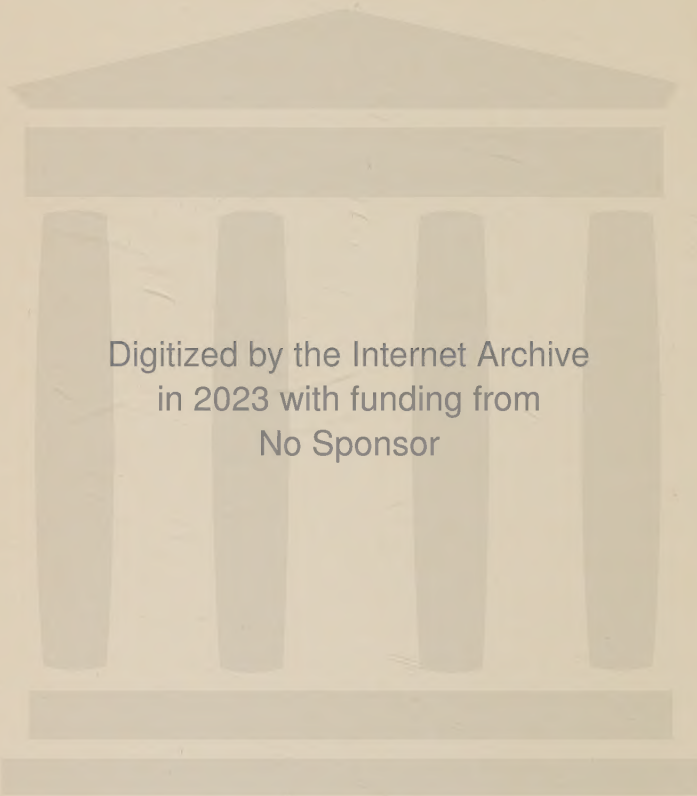
much of the inspiration

and

interest in speech

which made this book possible

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PREFACE.

The application of psychology to such fields as medicine, law, business administration and teaching generally has advanced to an astonishing degree since the World War. Methods of rating, studies of personality, intelligence testing and the like received considerable impetus from their successful employment during the war, for selecting officers, sorting men and assigning them to various branches of the service, through the recommendations of the Personnel Division of the branch of Psychological Service. The application of such work to the teaching of speech, training of teachers and students is even more recent, and has arisen out of the increasing demand for knowledge of speech science as well as of speech arts.

Many useful applications of psychology have been developed in psychological laboratories and there is a rapidly increasing interest in the study of psychology of personality, economic and social adjustments of the individual, in speech as the outward and overt expression of personality. Moreover such studies have received further impetus as a result of important contributions from various departments of speech, but some of the most important studies have been made in psychological laboratories and in departments of comparative philology, Phonetics laboratories, English literature and experimental phonetics, in various colleges and universities. High schools and private schools, teacher training institutions and public schools

are placing greater emphasis than ever before upon speech training, oral expression, speed in silent reading as training in quick and accurate thinking, and the ability of the teacher to improve the speech and expressional ability of the children under her instruction.

Interest in this subject is not entirely new, and Dr. Walter Dill Scott published as early as 1906 the first work on the Psychology of Public Speaking, which appeared in this country. Since that time very little work of the same nature has appeared, and the writer offers this work in the hope that it may meet the demand for a practical, modern handbook for use in departments of speech, public speaking, dramatics, schools of expression, oratory, and in departments of psychology where research work in speech is underway, and in teacher-training institutions where there is interest in securing a working knowledge of language development, relation of speech to the instinctive and emotional life of the child, fundamentals of expression, elements of normal tone production, speech measurements and the personality of the speaker, as well as the personnel of his audience.

For suggestions made in the preparation of her manuscript and for reading and corrections on the same the writer wishes to express her indebtedness to Dr. and Mrs. S. P. Hayes of Mount Holyoke College; for reading special chapters and for suggestions on the same she wishes to express appreciation to (Prof. Walter F. Dearborn) of the Harvard Graduate School of Education, to (Dr. William Healy) of the Judge Baker Foundation, to Dr. F. L. Wells of the Boston Psychopathic Hospital, to Dr. Elmer F. Kenyon of Chicago, to Supt. E. E. Allen of Perkins Institution for the Blind, and to the editorial staff of

PREFACE

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South Hadley, Mass., August, 1928.

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Chapter I

A CONSIDERATION OF THE EVOLUTION OF ARTICULATE SPEECH

Anthropological Evidences of the Beginnings of Speech.

HALF a century ago, it was commonly believed that man stood quite apart from animal creation, and the attempt to trace his gradual development from a remote ancestry, having its roots in pre-historic ages, met with active opposition. It was not pleasant for the great majority of people to dwell upon the possibility of descent from simian-like ancestors.

While the evidence is not forthcoming which enables us to say with certainty, "Just here did speech begin", we have recent important anthropological evidence which seems to indicate that it probably began as far back as a million years ago, in the first glacial period, when the oldest known representative of humankind lived. This is evident from the remains discovered,—the Java man known as the *Pithecanthropus Erectus*. (22) It has been shown (23) that in this early representative of mankind, the left brain was somewhat larger, and possessed important differences in complexity of structure as compared with the brain of the gorilla. Tilney, by constructing a brain-model to fill the skull cavity of the Java man, has found that these differences in structure as compared with the brains of the higher apes, indicate that this

pre-historic man possessed a distinct personality and powers of reasoning. Prominence of the inferior frontal convolution (Tilney, Fig. 375) strongly suggests that he had *learned to speak* and thus had laid the foundation to human knowledge. (23)

Handedness.

THE prominence of the left-brain seems to indicate a *preferential* motor area, and to imply the possession of a high degree of skill as compared with the performance of even the highest of the apes. This degree of skill in motor performance, undoubted evidence of the preference for use of the right hand, even in pre-historic man, indicates also the use of the muscles involved in speech, and the development of the motor-speech area at a very early stage in the history of mankind.

Factors in the Evolution of Speech.

IN order to clearly understand the implications of anthropology, we must study the evidences of the gradual evolution of man from lower to higher forms, and the development of articulate speech as the special possession of human beings. By virtue of his superior mental powers, man has gradually secured for himself a certain immunity against nature's inexorable laws governing life and death. The operation of the law of natural selection and other factors increased man's power of intelligent choice and enabled him to ascend and he finally emerged upon that level at which we find him in the pre-historic ages. He inscribed his insignia on the walls of caves and represented by unmistakable evidence his interests, activities, degree of skill, and mental level.

Relation of Man and the Anthropoids.

As far back as the first glacial period, a million years ago, man began to display those characteristics which differentiated him from the anthropoid apes. Remarkable resemblances in structure and function between man and certain types of anthropoids seem to indicate a relationship somewhere in the dim, prehistoric past. The physiology and anatomy of the body as a whole present the strongest evidences of this kinship, which gains support from a study of the structure of the brain. We also find similarities in the reactions of the blood of human beings when compared with that of anthropoids, and in the susceptibility to the same diseases, especially in the case of the chimpanzee and the gorilla. Nature must have tried many experiments before she could evolve a brain which could act as a receptive center for all kinds of sensory stimuli, awaken memories of past experiences, and also direct behavior through a so-called motor area. (17)

Speech Muscles.

IN the ape, the sub-lingual muscles are attached in a fauca in the middle of the lower mandible bone, while in man the same muscles controlling the movements of the tongue and sheets of muscles about the mouth, are attached to a bony projection at the same point (the middle of the mandible). It seems probable that this bony nodule or projection has been accompanied by a finely developed control of these muscles in man, which has also aided in the control of the laryngeal muscles involved in speech. (16) The discovery of the skull of the Neanderthal man and of the Java man shows that man existed at least 150,000 years ago in

the Pleistocene age. The brain and primitive skull of the Java man are strangely small, as compared with the skull of modern man. (16) (Chap. 4.)

Sensory Equipment.

COMPARING man with lower animals in the matter of sensory equipment, we find that early land animals possessed a cerebral dominance in the sense of smell which was more important to existence than were such senses as touch, hearing and vision. With the appearance of arboreal creatures, the sense of smell lost its primacy and conditions favored the development of touch, vision and hearing. The struggle for existence tended to develop motor habits, tactile and kinaesthetic sensation and gradually led to the development of the pre-frontal area of the brain, which is said to be concerned with attention and the coördination of mental processes in human beings. (21)

Development of Skilled Movements.

FURTHER development of the pre-frontal areas led to the acquisition of highly skilled movements, especially of the hands and fingers, and the *germs of intelligence in man* seem to date back to the Tertiary period, when creatures began to rely upon vision rather than upon smell. Not only did Nature develop the power of skill in the hands, but she differentiated by rendering one hand more skillful than the other, giving one a slight mechanical advantage over the other, early in the history of man's development. The assumption of the erect posture by man freed the forelimbs for activities other than locomotion and support, while the development of articulate speech enabled him to engage simul-

taneously in a variety of acts including that of communication.

According to anthropological evidence the greater number of mankind has always been right-handed, though the reason is not clear. (21)

Development of Speech.

THE expansion of the brain in the pre-frontal area undoubtedly led to a greater perfection of movement and better cortical regulation, which further stimulated the development of manual dexterity. The gradual perfection of the human type of nervous system, and the enrichment of the brain structure through the gradual development of mental processes, led to another step in man's emancipation, namely speech. The assuming of the erect posture was only a side issue on the way to intellectual superiority (13)

As the erect posture enabled man to specialize further in the use of the forelimbs, the cortical regions of the forebrain developed and gradually enlarged the cranial region, giving to man the human type of forehead. In Neanderthal man we see an illustration of the lowly state of man at his emergence from earlier forms, and the limited degree of frontal development largely accounts for his state of intelligence as compared with his descendants. That he *was* less intelligent seems certain.

Changes, Anatomical, Structural and Nervous, Accompanying Speech.

SCIENTISTS have long concerned themselves with the problem of the origins of speech and its relation to the assumption of the upright posture, the overgrowth of

the brain in the pre-frontal region, and the changes in the size and shape of the cranium in the pre-frontal region. The evidence at hand seems to indicate that erect posture has come about because the brain has made skilled movements of the forelimbs possible. The forelimbs being no longer required for locomotion are freed for activities requiring greater skill. Many animals, however, without the power of speech can and do walk erect.

Head and Face.

COMPARATIVE anatomy furnishes some important evidences of significant changes in the physiognomy of the facial features. The animal using the mouth alone to obtain food, must have a long snout and a series of grasping teeth, as in the case of the wild boar or the horse. The changes brought about by hand-feeding, produced a gradual recession in the snout region, as there was no longer any need for seizing and rending the food exclusively with the mouth and jaws. In terrestrial insectivora we find 44 teeth; the lower apes possess 36; the anthropoid apes and man each possess 32 teeth. The present crowded condition of the jaw indicates that a further shortening and reduction in the jaw region is under way, as civilized man has gone farther than any of the animals in hand feeding. As his food has become more tender, and as the use of implements has further reduced the action of the "grinders", man seems to have made a poor bargain so far as dentition is concerned. (8)

Jaw and Teeth.

PRIMITIVE man had larger and better-formed teeth,

and in an archeological survey of Nubians living before the dawn of the Christian era, not one case of diseased teeth was discovered. The whole mandible seems to be reduced as a result of the diminishing demands made upon the jaw. While the diminishing jaw requires less space, the growing brain has demanded a larger brain-case than that which we find in primitive man. (9)

With the shortening of the face has come a complete change in the axis of movements of the head; the range of movement has been increased. This facilitates nodding movements of the head and the shaking from side to side, and this has an important influence upon the functioning of the sense organs concerned in activities demanding a high degree of skill and intelligence. Mobile head and eyes are an aid to the localization of sound. The compelling sense of smell in lower animals gradually gave way to touch. Later the tactile duties of the "muzzle" part of the head were replaced by testing and touching with the hand. Tactile impressions received from the hand and observed also by the eyes, are far superior to tactile *snout* impressions which could be only *partially* observed by the eye. Thus it comes about that we have "movements, not muscles, represented in the cortex" of man. (10 and 12)

Postural Changes.

IMPORTANT changes in posture have brought changes in the structure and the direction of the spinal column. In reptiles the spine is directed slightly backward and upward. In arboreal man erect posture brought about changes in the curvature of the spine. Its convexity is directed forward, due to the upright position in man, in gibbons, and in many of the anthropoids. In com-

mending the upright posture of man we are prone to forget the many changes which it wrought upon the position of the internal organs. The viscera tend to swing backwards in upright animals; the liver is suspended more strongly from the lower surface of the diaphragm; and there are changes in the disposition of the heart and lungs which we do not find in pronate animals. (11)

Respiratory Changes.

THE upright animals tend to be broader chested also than quadrupeds. The chest becomes shallow from breastplate to backbone, but broader from side to side. Inspiration in animals is produced by muscles pulling the ribs forward towards the fore-limbs, and expiration is accomplished by a reversal of the process. In animals having an upright posture, the diaphragm separates the chest from the abdominal cavity, and creates a suction on the chest by pulling down its floor which causes air to be drawn into the lungs. Thus we find the two possible mechanisms of breathing in mammals,—first, the original air-breathing method in which the ribs are elevated towards the shoulder girdle, and second, the newer method of lowering the floor of the chest cavity. Bell* refers to these as the *first or external* and the *second or internal respiratory methods*. Man has greater dependence upon diaphragmatic action in breathing than have the vertebrates and other animals. (11)

Signs and Symbols.

MAN did not suddenly become possessed of the power of articulate speech; while arboreal life may have

*Bell: Sir Chas., *The Anatomy of Expression*.

started his ancestors on the upgrade, giving greater agility to them than was possessed by terrestrial creatures with whom they must compete, it was further specialization of the eye-motor coördinations, or linkage between eye, ear, hand and brain which gave to him the "understanding ear and the seeing eye." This led naturally to the development of certain modes of communication through signs or symbols which involved less time and energy than were required by the use of larger muscles.

Development of Skill in Bilateral Movement.

THE ability to learn and to profit by experience, and the power of discrimination or choice are characteristic of the higher mammals as well as of man. When primitive man became sufficiently intelligent to communicate with his kind by other means than emotional cries and facial grimaces or crude sounds, the greater cunning developed in the right hand would seem to have favored the development of arbitrary signs or gestures. Although the muscles of both sides of the face might respond to cerebral motor impulses, the bilateral movements found in speech need not necessarily depend upon innervation from both sides of the brain. A central coördination-station or control would be an essential to the development of speech, since a single memory "store house" on one side of the brain is postulated.

Development of Family Life.

THE prolongation of infancy in man as compared with other mammals is perhaps the special factor which has produced the family as a social unit. Many primates

show behavior found in the human family, such as the suckling of the young, the guarding of mother and infant, courtship, and the like. The foundations of family life may be observed in the primates. Wherever infancy is brief, the family life is of short duration, as in the case of birds. (13) Higher ideals evolved within the family group, and were perfected by the cultural acquisitions of many successive generations.

Development of Conscience.

IN the increasing perfection of mental functions and brain growth, evolution presents its most striking feature. The development of the great motor area as a center for "pictured movements" leads some anatomists to conclude that the silent pre-frontal area is concerned with ideation controlling moral and ethical conduct. *Consciousness* prepares the way for *conscience*, and the latter implies *ideals* or *standards of conduct*, as in man.

Speech Endeavor and Speech Content.

IT is impossible to say just what further steps in mental development led to the adaptation or variation of species which produced man. The influence of use and disuse of organs and systems, as held by Lamarck, may have led to a "sporting" or mutation among the offspring of early primates. Kohler finds that "besides the lack of speech, it is within extremely narrow limits in this direction that the chief difference is to be found between anthropoids and even primitive human beings; the lack of an invaluable technical aid (speech) and limitation to those very important components of thought (so-called images)—prevents the chimpanzee

from attaining even the smallest beginnings of cultural development." (18) If this is so, no particular biological purpose would be served by the mere ability to imitate speech sounds, in the case of the ape or the chimpanzee. Creative thinking is dependent upon images, concepts, and accurate perception based on experience and the development of reason and judgment. It has been found that the orang-utan has very limited concepts of time, either past or future. The images or concepts based on experience are generally quite inadequate, although there seem to be great individual differences among the apes. (25)

The Experiments of Kohler and Yerkes.

KOHLER (18) found the chimpanzee puzzled by even the slightest optical illusions to which man is constantly reacting. The mental patterns or configurations of man cannot be of the same variety as those of the ape, because the ape *lacks free images and speech*.

In his observations of the methods of communication employed by the apes in the primate colony at the Abreu plantation in Cuba, Yerkes (25) concludes that the language of these animals consists of rather complex vocal habits, by means of which they can produce a large number of sounds. The vocal organs are similar to those of human beings, and their sounds differ in pitch, quality and volume. The gorilla is notable for volume of tone, and the chimpanzee and gibbon, for the carrying-power and penetrating quality of their vocal utterances.

Character of Primate Vocalizations.

ACCORDING to Yerkes, primate vocalizations vary

from simple monotonous cries suggestive of human emotional cries, to rather complex systems of sounds having an ideational character. Vocalization occurs with the intent to express meanings, feelings, or both, the sounds ranging from simple clicking or chirping to imitative chatter. While no animal approaches man in power of communication, it is absurd to say that no creature other than man has developed a "language". Ants communicate by sensory signs, consisting mainly of odours and contacts. Many primates find vocalization an obvious advantage in conveying meanings. Garner (25) made the most extensive study of the vocalizations of primates. Vocal language or speech in monkeys and apes included, according to this authority, some sounds which seemed to stand for words. The number of utterances made by an individual monkey varied from ten to a score. *They were sufficiently well-marked in meaning and character so that Garner could himself communicate with the animals by using the same sounds.* He claims therefore that primate speech differs from human speech only in complexity and degree of development.

The Conclusions of Boutan.

BOUTAN, studying primates in France and in their natural habitat, concluded that the speech of gibbons and their vocal expressions were very different from human speech, and instead of a true language he called it a pseudo-language. (25) The speech of the infant and of the small child resembles the expression of emotion in the primates in various ways. Boutan believes that primate speech is *spontaneous, innate or instinctive* expression, rather than an *acquired* or

learned language as in man. He does not believe that the ape acquires his language through imitation and the learning of a vocabulary of sounds as does the human infant. The gibbons express their feelings vocally, but do not seek to express genuine ideas, nor do they attempt articulate speech.

Vocalizations of Primates.

THE orang-utan is not an expressive creature, but one that confines its vocalizations largely to whines, screams, groans of complaint, rage, anger or satisfaction. The orang-utan does however frequently make his keepers feel that he has something to say and is making an attempt to say it. (25) Garner's records of the speech of the chimpanzee consists of about 25 to 30 words having the characteristics of human speech. He thinks that the ape-speaker is *conscious* of the *meanings* of sounds he utters, using variations in *pitch* and *volume*. The ape indicates negation by a movement of the head as do human beings, and uses signs of the arm and hand to indicate affirmation. (25)

Mrs. Wm. S. Learned has made a transcription of the sounds produced by two young chimpanzees. She finds a total of 32 sounds made by the two, and says that they were mostly associated with food and drink or with other animals or persons. In character they seemed to take the form of emotional expressions. (25)

As a result of his observations on primate speech, Yerkes expresses the belief that primates might be taught to talk through imitation and muscle training, even though as compared with the human infant they are greatly limited in intelligence and power of ob-

servation and insight. Their learning would be slower than that of the human infant therefore.

A chimpanzee in the London Zoological Gardens learned to understand an extensive vocabulary of words and phrases, as does a child, just before learning to talk. (25)* Yerkes attempted to teach two young chimpanzees to utter words, but succeeded in none of the methods tried. He depended upon the imitative tendency however, and did not attempt direct muscle training by placing the tongue or holding the nostrils in any particular way. His experiment fatigued the animals and he concluded that his failure may have resulted from *inadequate methods*, rather than from the *inability* of the apes to *learn to speak* the words. Success in teaching a young orang-utan to speak two or three words is reported by Furness (25) but the training required six months.

Primate Speech Subjective and Emotional.

ON the whole, we may conclude that the vocalizations of primates are "innate emotional expressions", rather than *spontaneous speech* based on *images* and *abstract ideas* as in the case of man. *Seeing* strongly impels the ape towards *imitation*, but *hearing* has no such effect. No one has yet attempted, so far as we know, to teach the apes a simple, non-vocal sign language, such as is employed in teaching speech to deaf mutes. *Human speech is objective and based upon abstract ideas.*

The gamut of expressive sounds made by animals is entirely subjective and expresses emotions only. In man the gamut of phonetic expression is both subjective and objective, based upon imagery, perception, and understanding. Independent thinking and power of

*Romanes.

using colored ink to show distribution of same, and indicate also the probable location of the anthropoids as indicated on the rough outline on previous page.

Chart adapted from Klaatsch,* showing dispersal of primitive stocks.

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*After Herman Klaatsch, in the *Evolution and Progress of Mankind*. London.

Chapter II

LANGUAGE AND SPEECH DEVELOPMENT

Speech and Emotions.

SPEECH is a form of social behavior closely related to the emotional life of the child. By means of language and gesture, the infant finds himself able to obtain satisfaction for his wants more readily than by merely using the larger, fundamental muscles. He commands, threatens, complains, expresses warning cries, and shows pleasure or displeasure by means of primitive sounds or vocalizations. When he indulges in these, he finds that something *happens* in his environment. He is not necessarily concerned with the necessity of expressing himself to others, nor are his random utterances made merely as an overflow of energy. He is mainly concerned with the things which center about himself, and therefore his early forms of articulate speech are not simple dissociated words, but they stand for entire ideas. When the child says "Doe Gay", to the maid, he means "You must close the gate". He may imitate the sound made by an object which interests him, and in onomatopoetic form say "duggle-duggle" for water, because he has heard the gurgling sound made by the water as it came from the bottle. He may retain this name for water long after he knows that adults use another name for it. Observing the brilliant electric light bulb he says "Pĩ yight", and thereafter any illumination or bright color-patch is to him a "Pĩ yight", or *pretty light*. The light has an emotional

value to him, which he carries over to any similarly pleasing patch of color. "Pretty" may continue to be his emotional reaction to any pleasing stimulus.

Early Vocabulary Building.

AFTER many repetitions of seeing the object, of hearing it named and of experiencing sensations associated with touch, taste, smell or movement, he begins to acquire a vocabulary, and to apply "labels" to the objects and persons about him. The matter of early environment is of considerable importance in stimulating the child to make a social response to the various types of stimuli. Modern civilization has placed a heavy burden upon the infant in the acquiring of a vocabulary. Conditions in modern society are complex, and he must learn rapidly, if he is to compete successfully with other children in his environment or with adults in the household. The child's ability to build up a vocabulary is closely related to his level of intelligence. Chamberlain (3) found that his child's vocabulary was close to 3000 words at two and a half years. Waddle (10) found that the vocabularies of ten one-year-old children ranged from 3 to 24 words, and that the average was 8.9 words per child. The range of twenty children of two years of age was found to be 115 to 1127 words, with an average of 528 words. Bateman (1) found that the average of nine one year old vocabularies was 9.5 words, and that the average of twenty-three two-year-olds was 441 words. Waddle found that 8 three-year-olds had a range of 681-2282 words, with an average of 1407 words per child. Six children of four years of age ranged from 1020 to 2915, with an average of 2171 words per child.

Environment explains the larger vocabulary of these children as compared with studies made of children in less favorable surroundings. Pre-school children often talk incessantly. Brandenburg's studies show that his three-year-old child used 1487 sentences during a single day, and some 950 words per hour. (2)

Vocabularies of Defectives.

MANY feeble-minded children acquire only a few words in a life time. Others develop rather an extensive vocabulary. Idiots often have no speech at all. The normal child usually has a few simple words or portions of words at one year, and can make most of the consonant and vowel sounds if stimulated to do so. An "object" test to elicit the various sounds in the English language will bring forth most of the consonants and vowels, and six months later or at 1:6 many children can give the entire name of the object, using the consonant and vowel sounds of the language in their proper position in various words or in naming objects. This, of course, requires greater dexterity than merely giving the consonant sound alone. (9)

Speech Difficulties.

IN studying language reactions among children, we find that there are children of good intelligence who fail to talk at one year of age or even at one and a half. They may be even further retarded, in developing articulate speech sounds. Children who talk late, may have a pronounced lisp or a stuttering habit when they enter school. A boy or girl may even enter college without having overcome early infantile speech habits, such as lisping and letter substitution. In some

cases neither parents nor teachers have "noticed" the difficulty, nor has it been called to the attention of the child during those early formative years when speech is being acquired and when habits are most easily formed.

The psychology of language development has shown us that there has always been a close linkage between emotion and expressional activities in man. While animals lower than man never develop the articulate-speech language spontaneously, they have modes of utterance and reactions which at times closely approach human insight and behavior. Kohler (6) has shown that we can, under experimental conditions, identify the type of intelligent conduct found in the higher apes. Within certain limits the chimpanzee shows remarkable insight into problems. The anthropoid ape has been found to approach nearer to men in intelligence than to many members of lower ape species. In range of intelligence however, the chimpanzee falls far below man. The lack of articulate speech and limitations in the realm of mental images, and some doubt as to his perception of time relationships, constitute the chief differences between the insight, intelligence and problem-solving ability of the higher apes. In these things they fall far below man.

Theories of Language Development.

ONE of the earlier theories of language development held (7) that speech was a special creation for man, mysteriously developed, divinely made, and that the particular vernacular or dialect of a given tribe or group had been bestowed upon man in some special revelation. This theory is not in accordance with the

findings of etymologists and biologists who have studied primitive man and his language. We cannot ascribe the development of articulate speech to occult sources, because languages have developed gradually from crude, primitive forms to higher more complex CULTURAL modes of expression. It has been a slow, painstaking process involving centuries. Someone has said "That man who first verbally assailed his adversary instead of knocking him down, took the first step in civilization."

A second primitive theory of language development held that speech was in imitation of the sounds made by an object or animal. This has been popularly called the "bow-wow" theory. Max Muller explains that this "onomatopoetic" theory goes very smoothly as long as it deals with cackling hens and quacking ducks, but that around the poultry yard there is a high wall, and we soon find that it is behind that wall that language really begins. He explains that words of this type are sterile, or like artificial flowers, without root, because they are unfit to express anything beyond the one object which they imitate.

Another theory is the interjectional basis of language. This is based upon the assumption that speech grew out of the need for emotional expression such as ejaculations, exclamations, intense fear, pain or anger situations, leading to such cries as "ach!" "Ow!" "ugh", and the like. This is sometimes called the "pooh-bah" theory. (5)

Gesture.

STUDY of gesture and pantomimic expression, the sign language of deaf mutes and other handicapped per-

sons, shows that gesture plays an important part in language habit formation. The subjective-gesture language theory holds that gesture is an instinctive form of emotional expression, used as an outlet for mental states such as terror, love, anger, hate. The objective-gesture language theory holds that signs are used in a demonstrative way, or to depict or outline an important event in the life or thought of an individual.

Beginning of a Child's Vocabulary.

THE fact that the human child learns to speak, shows that he is psychically and physiologically better fitted by nature for the attainment of articulate expression, than are the highest of animals below man. Feelings may first be expressed largely through crude, rudimentary forms of expression such as the cry, the whine, the grunt, and these still persist in primitive languages as modes of utterance, and among children of higher cultural levels.

In the prelinguistic period of the first year, Stern (8) states that the child of normal mentality vocalizes through simple expressive movements of the vocal cords, such as reflex cries, expressions of comfort and discomfort, crowing, babbling and the like. The child's vocabulary of understanding far exceeds his vocabulary of expression in the early months of his life and for some years afterward.

Stern gives the following speech periods and standards for same.

I. First speech period: 1 year to 1:6 years.

Sentence sounds.

- a. Subjective—resembling expressions of emotion.
- b. Objective—in imitation of sounds made by animals, peoples and things.

II. Second speech period: 1:6 years to 2 years.

Attainment of a vocabulary.

- a. Associates names with objects.
- b. Desires to call names and to attain speech for himself.
- c. Questioning, which results in acquisition of a vocabulary, usually nouns and then verbs.
- d. Sentence building.
Replaces words for groups of words.
Uses some words of relation such as adjectives, adverbs, prepositions.

III. Third speech period: 2 years to 2:6 years.*

- a. Language inflections.
- b. Short, complete sentences.
- c. Syntax, giving united structural form to the sentences.

IV. Fourth speech period: 2:6 years to 3 years, approximately.

- a. Appearance of subordinate sentences.
- b. Many difficult constructions and subordination of clauses still remain beyond the child's power of attainment.
- c. The age of questioning has now arrived: i. e., the appreciation of time values shown in "when"? and the causal question "Why"?

From the fourth to the fifth year the main development of the mastery of the mechanics of speech is completed. The child should now be able to make all the consonant and vowel sounds and combinations which appear in the language to which he is accustomed.

Twins and Solitary Children.

TWINS and solitary children sometimes develop a language of their own which is understood by their

*According to Stern, (8) girls at 2 years, and boys at 2:6 years should have a vocabulary of about 300 words.

mother but which seems unintelligible to their play-mates and outsiders. Three sets of twins were brought at various times for speech examination, with the history of an "invented language." Upon analysis by means of short-hand notes, it was found that the speech was made up of perfectly good English sounds, but that the chief difficulty was the inability of these children to form the consonant elements correctly, or to combine them with the proper vowel sounds. Consequently they were giving mutations, omitting initial or final consonants, sometimes both. The difficulty was that the children had never learned to make the sounds correctly.

These pairs of twins talked much alike, the speech characteristics being much the same for each pair. A boy of $4\frac{1}{2}$ years, like his twin-sister left off consonants in initial and final position, but gave the vowel sound of the word perfectly well. He was asked to recite the following poem:—

"Rock-a-bye-baby on the tree top,
When the wind blows the cradle will rock.
When the bough breaks the cradle will fall,
And down will come baby, cradle and all."

He understood the poem and thought he gave the meaning as accurately as any other child, when he said it as follows,—

"Waw bäh bāy, aw ēē aw,
Ēh ĩ ōu, āy ĩ aw,
Eh ow āy, ũh āy ĩ aw,
Ow tũh aw-bye-bāy ěh aw."

He included several labial sounds such as *b* and *w*, and the lingual consonant *t*. All other consonants, whether in initial or final position, were omitted. This

boy was much distressed because other children ridiculed him, after he began to go to school. This increased his self-consciousness and sensitivity to such an extent that he began to react like an over-stimulated, nervous child. Nervousness in an older sister, with a similar speech handicap, had increased until she stuttered and there seemed to be indications that these twins were breaking down into a habit of stuttering. It is difficult enough to deal with a lisp, but doubly difficult when a stutter is imposed upon the indistinct speech. The methods of treatment for the two difficulties are quite different. In the case of lisping, letter position and phonetics may be safely used, but in stuttering it is usually unwise to direct attention to letter position and to the coördinate muscle movements.

Elimination of Speech Difficulties.

INFANTILE perseverations may be found when the child enters school, but it is desirable to eliminate them before the child is of school age, as it may impede his progress in school subjects and increase any unsocial tendencies in a sensitive child. Just as the pre-school period is the golden age for uprooting behavior difficulties such as temper tantrums, sulkiness, whining, selfishness and other unsocial behavior, so is it also the best time for the elimination of undesirable speech habits such as lisping, stuttering, indecisive utterance and slovenly speech. Many of us have lisped at some time, or have spoken indistinctly or have used letter substitutions in acquiring a vocabulary. The difficulty is, that some children continue to employ these primitive forms long after the majority of children have entirely overcome them.

Scolding and "nagging" only intensify the difficulty, setting it in the nervous system or dramatizing its value. Then it becomes difficult for the child to relax, to make a fresh start, or to speak clearly and fluently. It is a fundamental law of psychology that calling attention to any mechanism which is mainly reflex or automatic interferes with the freedom of coördination. Here lies the danger in muscle training and direct phonetic training with stutterers. The treatment must be largely through indirect control of the breathing mechanism, exercises in posture, conversations, dialogues, spontaneous speech, rather than through calling attention to the mechanics of speech production. Otherwise, a blocking may occur between the perception of facts and the motor speech response, or reaction to those facts. (11)

Speech Defects and Behavior Problems.

SPEECH defects are a serious problem in school and to some extent in colleges and in civilian life, because they are so closely linked up with the emotional life of the individual. Child Guidance Clinics report many cases of speech defects among the behavior cases brought for treatment. School physicians, school nurses, directors of special subjects, and supervisors are constantly confronted with the problem of the specially handicapped child, including the speech defective.

Speech and Leadership.

WHILE too great intelligence and too little intelligence seem to disqualify for leadership, because a person of this type does not conform to the *average* or group

standard, it seems to be true from recent studies that the college girl with a speech defect cannot adjust so well to college life or to society at large, as can the young person free from such a handicap. Human elements are necessary for mass control, for leadership, popularity, effective results. Therefore, it is important to possess certain physical and mental characteristics and combinations of the same, if one is to be a leader in any given field. Intelligence must be combined with cheerfulness, enthusiasm, self-control, poise, distinction in bearing, physique or appearance, if one is to secure and to maintain a position of leadership in society, or in one's profession. These elements are especially desirable in the public speaker, actor, teacher of speech or exponent of stage arts.

Social ease, linguistic ability, pleasing personality, good appearance and character are recognized as important factors in many walks of life. On the other hand, a speech defect may prove to be a serious economic as well as a social handicap.

Speech Defects Increasing.

It is a matter of some concern to educators interested in speech training to discover that speech defects seem to be on the increase in American Schools. Ineffective, slovenly speech, foreign accent, lisp and similar speech reactions abound in both public and parochial schools of the day. Children trained in many private schools and in homes where an excellent speech standard is maintained, rarely have speech difficulties. In some good homes, however, we find children who are allowed to whine, to tease, to speak in indistinct, careless, inert manner, without any attempt being made to improve or to overcome this condition,

*Unsympathetic Parents and Teachers May Cause
Speech Defects.*

A HELPFUL attitude on the part of teachers and parents is of the utmost importance in the matter of speech development. A high-strung, nervous teacher in a certain city had, each year, for a number of years, a stuttering child in her schoolroom. There had been no history of stuttering previous to the time when such children came into her room. In these cases the symptoms were relieved when the children were transferred to another classroom.

An unsympathetic parent or teacher may be the cause of unhealthy mental attitude in a girl or boy during the adolescent period. Take the case of A—, who entered college with a poor record in English work and a rather low standing in intelligence tests. She was very nervous when she took the tests, and also noticeably nervous when taking her *speech examination* in the fall of her Freshman year. She had made good marks in most subjects on her *college entrance examinations* and seemed to have a good mind. It was found that she had a great fear of speech situations, of written composition and of English Literature. She was poor in oral composition and disliked the subject, because an English teacher had told her in high school that she was very poor in English and that she would never be good in it. This had created an unhealthy mental attitude which had interfered with her work. Analysis of the situation brought to light the cause of her difficulty and with a little help she began to improve both in oral and in written composition. By the end of the Freshman year she stood well in her English work and had overcome her fears of the

subject so that her scholarship had come up to the desired level.

SUMMARY.

- I. Gesture language precedes articulate speech.
- II. Articulate speech develops in response to social stimulation.
- III. There is considerable variation in the sizes of children's vocabularies at the same age.
- IV. Infantile perseverations may persist in speech long after the period in which they ordinarily disappear.
- V. Training and environment play an important part in the speech development of the normal child.
- VI. Speech plays an important part in the mental and emotional development of the child.
- VII. A speech defect is more easily eliminated in early childhood than at any other period.

Exercise.

THE following is the record of the vocabulary of a child of 22 months. In the first column is the word given by the child. In the second column appears the word intended. Study the child's words and make a list of the phonetic difficulties such as initial, middle, or final consonants omitted, or sound substituted, and try to analyze the nature of the speech deviations. Compare the parts of speech given by Baby R at the end of the chapter with Waddle's tables in his chapter on "Language" in "An Introduction to Child's Psychology". Use the score sheet for articulation of English sounds to study Baby R's omissions or difficulties on specific sounds. (page 36)

Study also the table showing the changes by month in Baby R's pronunciation of 30 words, and try to account for the difficulties which appear. (page 38)

VOCABULARY OF BABY R. AT 22 MONTHS.

I. VERBS

Word given by child	Word intended	Word given by child	Word intended
'äd	had	'ind	wind
'air	wear	'ipe	wipe
are	-----	is	-----
'ät's	that is	keep	-----
äst	asked	kold	cold
aw	want	know	-----
'äz	has	kÿe	cry
beeve	believe	let go	-----
bī'	bite	make	-----
bīng	swing	mee	creep
bōke	broke	1 dance }	dance
bürpsh	burst	2 nănse }	
că'	can	nō cry	do not cry
caught	-----	'ock	lock
cō'äpse	collapse	oh	show
comes	-----	'ole	hold
cook	cook	'ock	lock
c'mere	come (here)	ōont	won't
dance	-----	'ope	open
do	-----	'ōsh	wash
don't	-----	pargie	pardon
dōp	stop	peep-boo	peek-a-boo
durn	turn	1 pease }	please
'ear	hear	2 peesh }	
eat	-----	put	-----
fawing	falling	see	-----
find	-----	shall	-----
fūsh	fuss	1 shawl }	fall
gëdüng	thanks	2 vall }	
get	-----	3 fall }	
go	-----	six	fix
goes	-----	string	-----
going	-----	tärry	carry
g'ome	go home	teach	-----
1 gong }	gone	tüm	come
2 gone }		'üb	love
g'way	go way	'ünt	hunt
had	-----	wait	-----

1. VERBS (*Continued*)

Word given by child	Word intended	Word given by child	Word intended
1 'öp }		want	-----
2 hop }	hop	weed	read
huh ie	hurry	whinney	-----
'i	lie	will	-----
'ike	like	wün	run
I'm	-----	zzzz	buzz

II. ADJECTIVES

'ard	hard	1 gark }	
aw'come	welcome	2 dārk }	dark
awful	-----	geen	green
back	-----	good	-----
bad	-----	i i	little
1 bēp }		'ite	white
2 wet }	wet	keen	clean
bēsh	blessed	kūsh	crisp
1 bidi }		man's	-----
2 pi }	pretty	morn	more
3 purr }		nās'	nasty
big	-----	nawie	naughty
bōō	blue	nine	-----
b'own	brown	nŷe	nice
bumble	comfortable	ōddow	yellow
bake'	baked	'öt	hot
dāt	that	poor	-----
dihty	dirty	1 sawi }	
dry	-----	2 shawi }	sorry
Düts	Dutch	seet	sweet
eight	-----	sil	silver
five	-----	ten	-----
four	-----	wěd	red
free	-----	wee	-----
gāke	great	wěggie	regular
		zish	this

ADVERBS		PRONOUNS	
Word given by child	Word intended	Word given by child	Word intended
all	-----	1 ah }	I
as	-----	2 I }	
away	-----	it	-----
back	-----	me	-----
bight	right	my	-----
dēre	there	ōō	you, your
dight	tight	sōss	myself
1 down }	down	we	-----
2 downg }		what	-----
dūs	just	who	-----
'ēdy	ready	who's	who is
enough	-----	1 'āt }	that
'ēre	there	2 yāt }	
'ēs	yes	zhish	this
fōōey	through	PREPOSITIONS	
here	-----	at	-----
how	-----	ätter	after
'igh	high	byter	after
'ight	right	1 foe }	for
kite	quite	2 for }	
late	-----	in	-----
naw	not	ō'	of
nearni	nearly	on	-----
now	-----	ünner	under
o'er	over	up	-----
off	-----	EXCLAMATIONS	
out	-----	awch	ouch
so	-----	baing	bang
1 such }	such	merss	mercy
2 sūsh }		oh	-----
too	-----	oh my	-----
vüll	full		
'way	away		
outdoors	-----		
'ēre	where		
1 shoōn }	soon		
2 soon }			

NOUNS

Word given by child	Word intended	Word given by child	Word intended
'āmmie	lambie	bang	-----
1 'ānd }		barn	-----
2 hānd }	hand	bāse	vase
3 'ān }		1 ball }	
4 ānt }		2 baw'l }	ball
Aunt Fosh	Aunt Flora	3 baw }	
anūh-er	another	1 bëckūs }	breakfast
'āp	lap	2 bëcksūs }	
1 āp }		bee	-----
2 āp'ful }	apple	(own name)	
3 āppōōl }		1 Beebee	
4 āppōls }		2 Bee'er	
'apkin	napkin	3 Beech }	Beecher
'āp kōs	apple sauce	4 Bitcher	
'āt	hat	5 Beecher }	
autermobile	automobile	1 bē'ies }	berries
'āy	hay	2 berries }	
aydēe	lady	bībōō	Bible
bā	bath	bip	bib
1 baby }	baby	boat	-----
2 beebee }		1 bōk }	
bag	-----	2 box }	box
1 baish }		bōll	bell
2 spash }	splash	bone	-----
1 bāishfye }		bōō-bird	bluebird
2 bū'erfye }	butterfly	bōōick	Buick
3 būsh-shy }		bōōp	book
banana	-----		

NOUNS

1 bōōsh }	brush
2 bōysh }	
bōōts	woods
1 borch }	porch
2 porch }	
bōsch	broth
boy, boys	-----

NOUNS

dōōse	juice
Dorg	George
dūb	tub
duck	-----
dūggie-dūggie	water
'ēaves	leaves
'ēcktie	necktie

Word given by child	Word intended	Word given by child	Word intended
1 bow-wow }		eye	-----
2 dog }	dog	Fă'ces	Frances
3 doggie }		fee äg	flag
bridge	-----	fire	-----
bŭ'er	butter	1 fök }	
bŭm bee	bumble bee	2 chock }	fox
bŭp	bump	Fölk	Foulke
bŭp-döm	'utton	1 foe }	
1 cah }		2 sewe }	shoe
2 car }	car	free	tree
caterpooder	caterpillar	fŷe	fly
cērez	cereal	1 gähzh }	
chí'	chin	2 gähärzh }	garage
chōō-car	train	gāke mŭmpba	great grandpa
chuch	church	gāsheen	gasoline
coat	-----	gāsh	grass
c'ock	clock	gās-öbber	grasshopper
comb	-----	geeks	Skeeziks
cōō-in	cushion	1 gihl }	
corn	-----	2 girl }	girl
couch	-----	gold	-----
cum	plum	gōōds	foods
1 curl }		gōppa	grandpa
2 quirl }	squirrel	hair	-----
c'wock	cracker	hām'	hammer
1 dā }		höll	hill
2 dā'ie }	daddy	'ide	ride
3 dādŭh }		idea	-----
daw'ers	drawers	light	light
daw ie	dolly	'igh share	high chair
1 Dee }		'ine	shine
2 Dune }	Dune	Ish	Felicia
dēmman	gentleman	jëss	dress
1 dëss }		keek	cheek
2 jëss }	dress	keen	screen
dick	drink	key, keys	-----
die'ingroom	diningroom	1 ki-ie }	
dī-er	dinner	2 kiddie }	kitty
die-yer	tiger	kōōl	school
dīm	gingerbread	knee	-----
dīm	Jim	kŷe	cry

NOUNS		NOUNS	
Word given by child	Word intended	Word given by child	Word intended
ding dong	-----	maw'ing	morning
ditch	-----	menite	-----
1 dodge }	college	měnse	pencil
2 dollege }		Mermǒng	Vermont
doe	door	mī mī	Meemi
doors	-----	mīnt	minute
doll	-----	misch	mischief
		Miz Ūsh	Mrs. Russell
mōlk	milk	peet	feet
mōmō	mama	p'ick	prick
mōōik	music	'pīder	spider
moon	-----	pie	-----
moūsh	mouse	pig	-----
moush	mouth	pim	pin
1 moy }	grandmother	Mōōma	Pluma (an aunt)
2 gōmmoy }		'pōon	spoon
Muh Biz	Mr. Brisbane	pūshy	pussy
mūh'er	mother	rāy	rain
nails	-----	sāce	face
nimēl	nipple	schtōōl	stool
noise	-----	share	chair
nose	-----	Shawee	Shelton
nuts	-----	shawl	-----
nye ie	nightie	sheat	seat
ō'ange	orange	sheep	sleep
Ole	Will	sheep	sheet
'ōme	home	shē-iēs	cherries
ōōman	woman	shīde	side
'ōsh	Ross	ship	-----
1 'ōūsh }	house	sippy sip	snippysnip
2 ouse }		soap	-----
'ōze	rose	sock	-----
pear	-----	sōōt	foot
1 peep-peep }	chicken	1 'tair }	stairs
2 shick }		2 'tairs }	
1 peesh }	piece	tā'le	table
2 piece }		'tār	star

Word given by child	Word intended	Word given by child	Word intended
Tăt	Tad	wöll	well
'tâte	State	wöll	will
tea	-----	wööm	room
'töne	stone	wōpe	rope
tōp	-----	1 yair }	chair
tōsh	toast	2 share }	
'tōve	stove	yēch	wretch
town	-----	1 yire }	fire
tūp	cup	2 fire }	
'ūg	rug	zinc-osside	zinc oxide
ūmber	umbrella		
'ūnch	lunch	MISCELLANEOUS	
'ūnk	uncle	1 bÿe-bÿe }	goodbye
urr	ear	2 good bye }	
Ūsh	Russ	3 good night }	
wee-weez	toes	hoe woe	hello
whee	wheel	how do	how de'do
wind	-----	no	-----

SUMMARY

Nouns,	209
Verbs,	82
Adjectives,	46
Adverbs,	34
Pronouns,	11
Prepositions,	9
Conjunctions,	1
Exclamations,	5
Miscellaneous,	6
<hr/>	
Total,	403

The vocabulary of Baby R. was studied by Miss Katharine Foulke, of Pennsylvania State College.

Ref. Foulke-Stinchfield: The Vocabularies of Four Infants Under Two Years of Age: Jour. of Genetic Psychology, 1928 (in press.)

TABLE SHOWING BY MONTHS CHANGES IN BABY R'S
PRONUNCIATION
of 30 words.

Gone	gong, 12th month; gone, 12th month.
Apple	ap, 13th month; good ap., 16th month; ap-ful, 22nd month.
Splash	baish, 21 months; spash, 22nd month.
Beads	buit, 21 months; bead, 22 months.
Pretty	pi', 18th month; bi'di, 18th month; purr, 22 months.
Dance	nance, 21st month; dance, 22nd month.
Hop	'op, 22nd month; hop, 22nd month.
Please	peesh, 21st month; pease, 22nd month.
Soon	shoon, 21st month; soon, 22nd month.
Fall	shawl, 21st month; vall, 21st month; fall, 22nd month.
Such	sush, 21st month; such, 21st month.
Dark	gark, 21st month; dark, 22nd month.
Down	downg, 14th month; down, 21st month.
House	'oush, 19th month; 'ouse, 21st month.
College	dodge, 22nd month; dollege, 22nd month.
Dune	Die, 18th month; Doo'ie, 19th month; Doon-dee, 19th month; Dune, 21st month, (name of an aunt).
Grandmother	Moy, 21st month; gommoy, 22nd month.
Garage	garzh, 21st month; ga'arzh, 22nd month.
Great-grandpa	Goppa, 22nd month; gake mumpba, 22nd month.
Squirrel	Curl, 22nd month; quirl, 22nd month.
Stairs	'tair, 21st month; 'tairs, 22nd month.
Fire	Yire, 16th month; fire, 22nd month.
Chair	yare, 21st month; share, 22nd month.
Chicken	pee-pee, 16th month; shick, 22nd month.
Breakfast,	beckus, 22nd month; becksus, 22nd month.
Butterfly	baish-fye, 21st month; bu'er fye, 21st month; bush-shy, 22nd month.
Kitty	Ki'ie, 21st month; Kiddie, 22nd month.

Beecher	Bee'hee, 19th month; Be'er, 21st month; Beech, 21st month; Bitcher, Beecher, 22nd month.
Daddy	Da', 18th month; Da'ie, 21st month; Da- duh, 22nd month.
Mama	Momom, 18th month; mo'er, 21st month.

*Score Sheet for Articulation of English Sounds.**

1. *Consonants.*

In Initial Position.	In Middle Position.	In Final Position.
h	h	
wh		
f	f	f
v	v	v
th (voiced)	th	th
th (voiceless)	th	th
s	s	s
z	z	z
sh	sh	sh
----	zh (as in azure)	----
ch	ch	ch
j	j	j
l	l	l
r	r	----
p	p	p
b	b	b
m	m	m
t	t	t
d	d	d
n	n	n
k	k	k
g	g	g
----	ng	ng
pl	fl	gl
tr	br	gr
w	w	----
y	y	y

2. *Vowel Sounds.*

a in <i>about</i> .	-oor as in <i>poor</i> .
ē as in <i>each</i> .	-oy as in <i>boy</i> .
ě as in <i>every</i> .	ō as in <i>go</i> .
ǎ as in <i>Anne</i> .	-ur as in <i>burr</i> .
ou as in <i>our</i> .	-ear as in <i>fear, cheer, here</i> .
ō as in <i>odd</i> .	-air as in <i>fair, mare, there</i> .
ũ as in <i>up</i> .	-ire as in <i>fire, higher, buyer</i> .
u as in <i>put, book</i> .	-ä as in <i>arm</i> .
ĩ as in <i>quickly</i> .	aw as in <i>water, awe</i> .
ā as in <i>paper</i> .	ōō as in <i>Boot</i> .
ī as in <i>light</i> .	

*Adapted from Score Sheet for Articulation Tests, Blanton-Stinchfield, and used by permission of C. H. Stoelting & Co., Chicago, Ill., publishers of speech testing material.

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Chapter III

THE PHYSIOLOGICAL BASES FOR SPEECH

Speech Mechanisms.

ARTICULATE speech in man depends upon five mechanisms:—

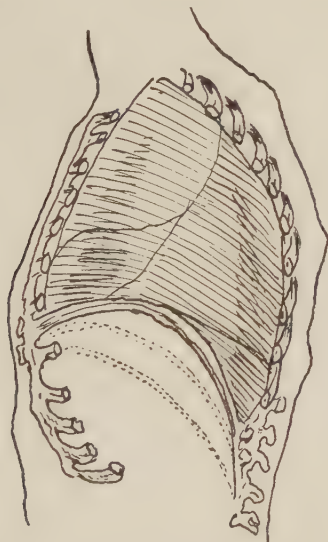


FIGURE 1.

The above drawing of the diaphragm shows (by dotted lines) its downward extension in breathing.

- (1) A bellows-like apparatus called the mechanism of respiration.
- (2) A sound-producing tube containing the vocal cords located at the upper end of the trachea and called the mechanism of phonation.
- (3) A resonator mechanism in the cavities above the

trachea opening into the glottis.

- (4) An articulatory mechanism which moulds tone and noise into vowel and consonant sounds by means of the action of lips, teeth, gums, hard palate, soft palate and tongue.

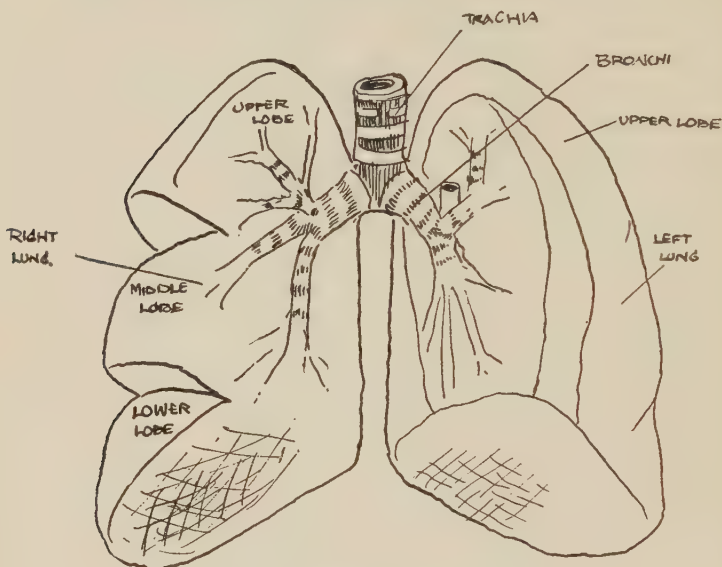


FIGURE 2.

Showing lungs, bronchial tubes, and trachea.

- (5) The motor speech area of the brain, and the nerves which convey to the speech organs the motor speech impulses.

Respiration and Phonation.

IN quiet respiration the diaphragm descends gently, and exerts a slight pressure upon the abdominal viscera. It also acts upon the intercostal cartilages, forcing the ribs apart so that the lungs may be filled with air. In expiration the diaphragm returns to its dome-

shaped position, and assists in expelling the air from the cavity of the thorax. The concave upper surface of the diaphragm forms a roof above the abdominal viscera, and separates the abdominal from the thoracic cavity. Anteriorly the diaphragm is attached to the breast-bone, and posteriorly it is attached to the vertebrae of the spinal column. The diaphragm acts as a lever or bellows-force, in regulating the amount of oxygen inhaled and the carbon dioxide exhaled during the process of respiration. (7) (Figure 1.)

In deep respiration we find the same action, with some additional muscles called into play. The shoulder blades are forced farther apart, the neck muscles are more active, shoulder and back muscles take a more active part and the ribs are stretched farther apart than in gentle respiration, thus increasing the capacity of the lungs.

As the chest alternately expands and contracts, the lungs take in and expel a volume of atmospheric air. (Figure 2.) This air comes into contact with the blood stream by way of the spongy substance of the lungs. Deep respiration may produce an effect upon the blood by increasing the combustion and production of carbon dioxide.

The volume of air expelled from the lungs passes through the windpipe into the larynx or voice box, thence through the narrow aperture between the two vocal cords, called the glottis, and from there into the pharyngeal, oral and nasal cavities. These resonate the tones, giving to each vowel its peculiar quality. The sound-producing portion of the larynx, called the vocal bands, are two folds at the upper border of the trachea which may come together to vibrate in their entire length, or their tension may so change that they vibrate

in part only. The air from the lungs, passing over the vocal cords sets them in motion and gives rise to vocal sounds, which vary in duration according to the amount of the air blast, and the amplitude of the sound wave. (5)

Characteristics of Voice.

VOICE in speech and song has four characteristics, called (1) quality or timbre, (2) time or duration, (3) amplitude or intensity, (4) pitch. It is in the resonating cavities of mouth and nose that the vowel is given its characteristic *quality* or "*timbre*". The soft tissues of these resonance chambers render the walls more or less elastic and flexible. By contraction or expansion of the muscles governing the soft palate and tongue the tone may be greatly modified. By means of the velum or soft palate, nasal resonance is regulated or completely prevented. As the tongue moves forward it decreases the size of the anterior portion of the oral cavity; as it moves backward it decreases the size of the posterior portion of the oral cavity thus playing an important part in the quality of the vowel tone. The lips too participate in this alteration of vowel quality. With lip protrusion we have the long oo sound as in *boot*; with slightly less protrusion we have the short oo as in *foot*. In pronouncing ee as in *beet*, the corners of the mouth are retracted and the lips extended rather than puckered. It is held that the most resonant qualities are obtained when the tone is focused well forward in the oral cavity for oral tones, and in the nasal cavity for nasal tones. (2)

In laughing, the air is quickly expelled from the lungs, the glottis being nearly in a position to produce

voice, but the cords not completely approximated. In crying the time interval between air blasts is longer. In the hiccough the sudden closure of the glottis causes a sharp and sudden inspiration. In sneezing the chest is emptied suddenly through the nose, instead of through the mouth, the irritation usually arising in the mucous membranes of the nose. In speech the air passing from the lungs through the aperture of the glottis enables tone to be produced at will. The tones are moulded into articulate speech by the action of the mouth agents, including lips, teeth, tongue, soft and hard palate. In whispering the glottis is only partially open, and the air passing through gently is not sufficient to set the vocal cords in motion. We have therefore *whispered* or *voiceless* speech. In singing there is a greater alteration in the size and the shape of the resonance chambers and in the glottis and vocal cord tension than in ordinary speaking. The expiratory air current acts more forcibly upon the vocal cords in singing than in speaking.

Terms Used to Describe Types of Respiration. (7)

ABDOMINAL breathing is characteristic of males and children, but costal breathing predominates in women. The normal intake is about 500 cubic centimeters of tidal air. The vital capacity varies from 2000 cc in women to about 4000 cc in men. A tall person has usually a greater vital capacity than a short person. *Residual air* is the name given to that left in the lungs after expiration, while *tidal air* is that breathed out in expiration. By *complemental air* we refer to that which can be breathed in over and above tidal air. *Supplemental air* is that breathed out after a quiet expira-

tion by forcible expiration. From the standpoint of speech we usually consider that there are four types of breathing (a) clavicular or shallow breathing, (b) costal breathing in which upper or lower ribs are

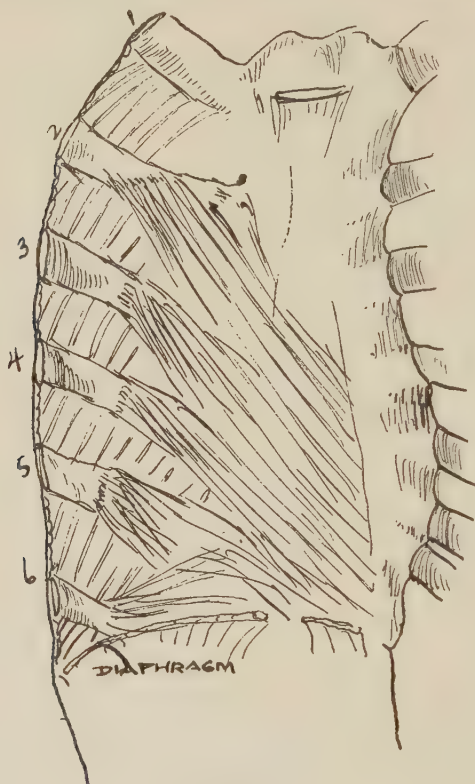


FIGURE 3.

Showing diaphragm, ribs and costal cartilages.

chiefly active, (c) diaphragmatic, depending chiefly upon the descent of the diaphragm to enlarge the thoracic cavity, (d) central breathing, which is a combination of diaphragmatic and costal breathing. (Figure 3.)

From the standpoint of physiology, the one essential thing for the speaker and singer is breathing. Both man and animals have a special respiratory center located on the floor of the fourth ventricle of the medulla, just above the spinal cord, or at the level of the brain stem. At birth this center is stimulated by the action of carbon dioxide and respiration is begun. Ordinarily the breathing process is a steady, rhythmic one, but under certain conditions it may become jerky, sudden contractions and relaxations succeeding each other at irregular intervals. Fear, visual and auditory stimuli, and strong emotion of any kind may at times interfere with the natural rhythm of breathing and by inhibition or reënforcement cause marked variations in the air column. Deep breathing and steady rhythmic control are necessary for the speaker who wishes to keep the volume of tone under command.

Irregularities in Breath Control.

MUSCLES of the diaphragm sometimes become tetanic. This causes a condition of sustained contraction, followed by a sudden "spasm" or spasmodic release of the musculature in the effort to return to normal respiration. We know from physiological studies that fatigue decreases steadiness of movement. Breathing exercises should not be practiced too vigorously or for too long a period. The stutterer usually thrives better if his attention is not directly called to the mechanism of breathing, as attention interferes with the freedom of coördination, causes fatigue through over-effort, and increases the speech difficulty.

We usually find that there is a difference in the breathing curve made in quiet respiration from that

made during phonation. While both inhalation and exhalation follow much the same rhythm in ordinary life breathing, we find that the tendency, during phonation, is to take a rapid breath followed by a slow exhalation. Thus in speech we ordinarily alter the respiratory rhythm. The motor breath force is often found to be inadequate in the case of many stutterers, anaemic individuals, consumptives, deaf mutes, rapid speakers, and others whose speech and breathing mechanisms are poorly coördinated. Associated with respiratory disturbances we find nervousness, excitability, rapid pulse beat, throbbing arteries and even irregular heart action. Irregularities in breath control, spasmodic action of the diaphragmatic and laryngeal muscles concerned in speech, produce constrictions or spasms in various parts of the vocal apparatus, and interfere with freedom and ease in tone production. The development of breath control and the establishment of normal breathing is regarded by most authorities in the field of speech and singing as the first essential to good tone production.

Measurements of Respiration.

By using a standard spirometer, or by taking the upper and lower chest measurements with a measuring tape, with the chest first inflated and then deflated, one can often tell whether shallow breathing or deep breathing predominates. The teacher often has reason to believe that there is some nasal or oral obstruction which interferes with normal respiration. Enlarged lymph glands such as diseased tonsils or adenoid tissue certainly interfere with respiration. Spirometer or chest measurements taken at regular intervals serve

as an incentive to increase the chest capacity, and we know that vital capacity is highly correlated with physical well-being. Smedley has shown that there is a direct correlation between vital capacity and school progress. It seems probable that there may be a similar correlation between vital capacity and effective speech. Girls fall below boys in lung capacity at every age. (11)

Smedley's Norms of Vital Capacity (*) in Cubic Centimeters,
using standard spirometer.

Age.	Boys.	Girls.
6 yrs.	1023 cc.	950 cc.
7	1168	1061
8	1316	1165
9	1469	1286
10	1603	1409
11	1732	1526
12	1883	1664
13	2108	1827
14	2395	2014
15	2697	2168
16	3120	2266
17	3483	2319
18	3655	2343

The normal rate of respiration is about 18 respirations per minute, but it is slightly more rapid in childhood and slower than this in old age. It varies however with health and exercise. Whatever affects the heart beat may affect the respiration.

Phonation.

THE sound producing mechanism known as the voice box or larynx is suspended between the base of the

*Whipple's Manual of Mental and Physical Tests. Warwick and York. Baltimore 1910. p. 95. Edit. 1914. Part I.

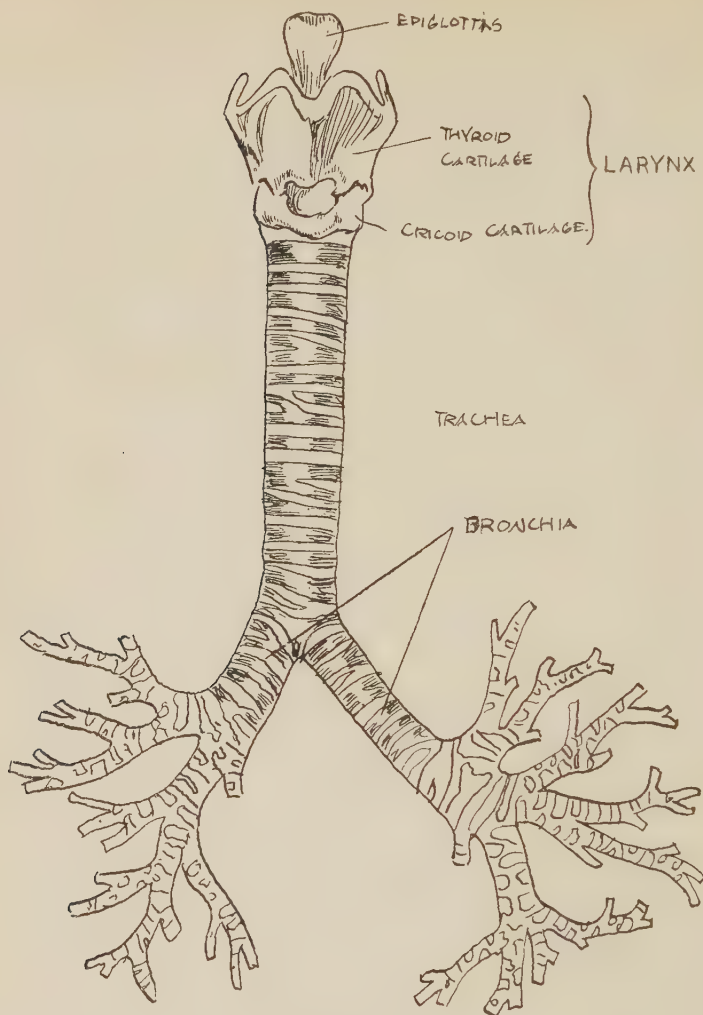


FIGURE 4.
Showing epiglottis, trachea and larynx, with thyroid and cricoid cartilages.

tongue and the upper end of the trachea. It is somewhat like a triangular box in shape, with the apex

at the front (in the region known as the "Adams' Apple"). The most important cartilages of the larynx which are concerned in voice production are

1. The epiglottis.
2. The cricoid.
3. The thyroid.
4. The two arytenoid cartilages.

The epiglottis above the larynx is chiefly concerned with guarding the entrance to the larynx; it prevents

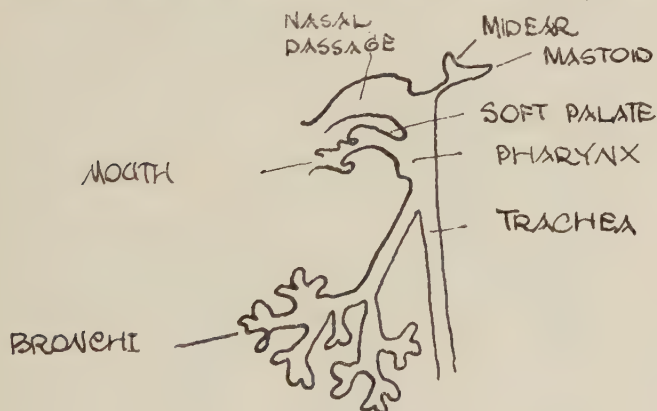


FIGURE 4A.

Diagram showing relations of nasal and oral cavities to trachea and bronchi.

food or liquid from entering the larynx and acts as a "shute" to direct the food into the œsophagus. (Figures 4 and 4A.)

At the lower border is the cricoid cartilage or the enlarged upper ring of the trachea upon which rests the base of the thyroid cartilage. The thyroid cartilage which is shield-shaped in appearance, is the largest cartilage of the larynx. At the back of the larynx are two pyramidal-shaped cartilages known as the arytenoid cartilages, to which are attached the posterior

ends of the vocal chords. The arytenoids are situated at the upper posterior region of the cricoid cartilage. (See Figures 5 and 6.)

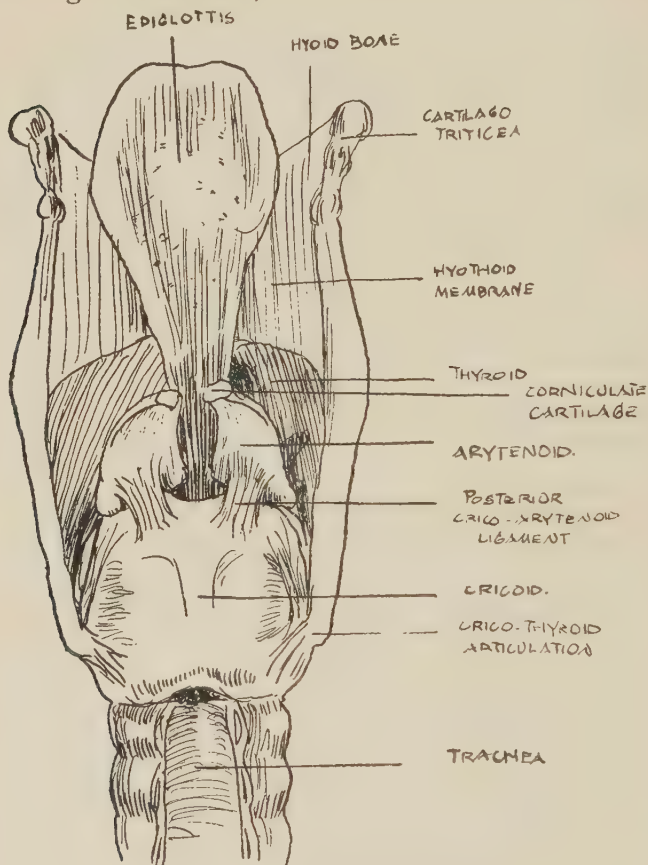


FIGURE 5.
Larynx view from behind, showing arytenoid cartilages and posterior muscles.

The vocal chords are attached to the thyroid cartilage anteriorly and to the arytenoid cartilages posteriorly, being stretched across the larynx. They really resemble two folds extending into the interior of the

larynx, from the walls of the tube at the upper end of the trachea. The glottis or space between the chords is V-shaped in quiet respiration, but is almost completely closed in speech or song when the chords are approximated. (Figure 7.)

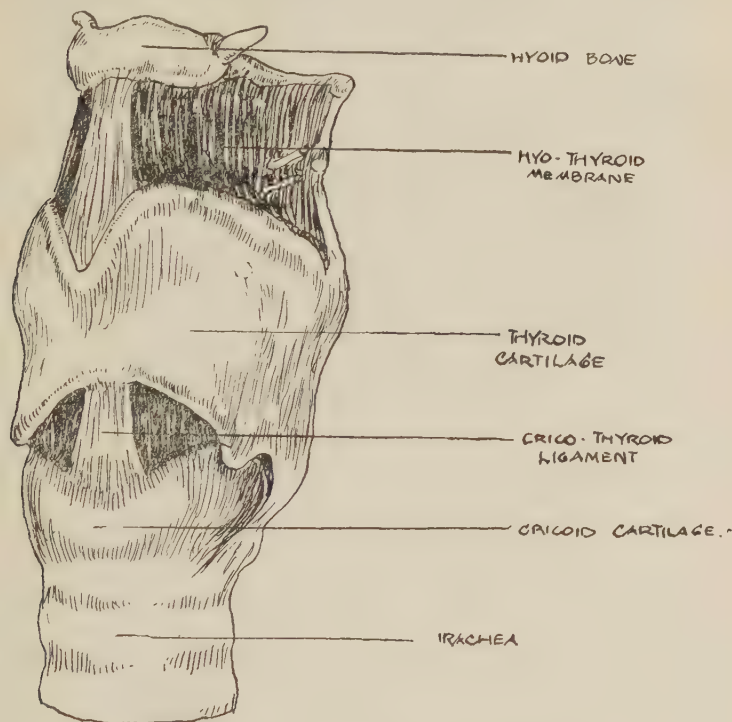


FIGURE 6.

The Larynx, front view, showing cartilages and suspensory ligaments.

Above the true chords are two bands called the false chords not concerned with voice production, but perhaps exercising a protective function. Some writers hold that they frequently interfere with tone production by constricting the tone passage. The ventricles of the larynx, which extend above and back of the false

chords, seem to exercise the function of lubrication, keeping the true chords moist and in normal condition when the throat is in a state of health. (Figure 8.)

Until the changes of puberty begin, the larynx is

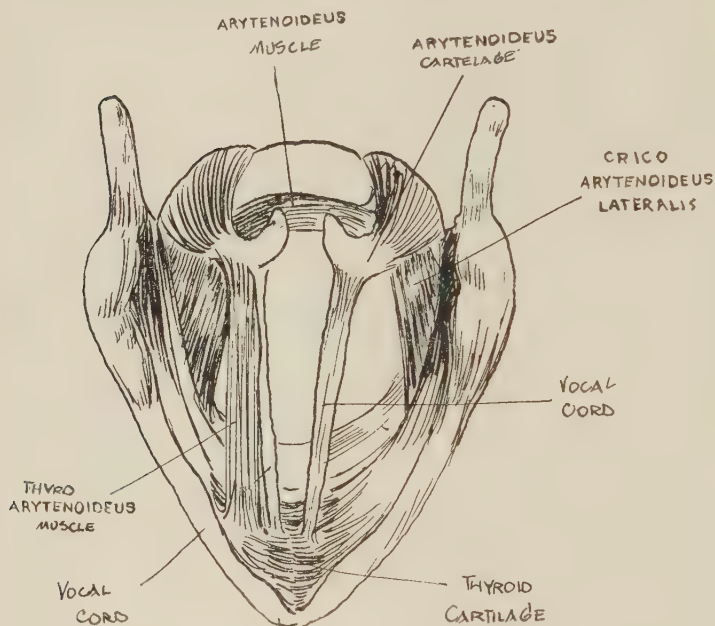


FIGURE 7.

Larynx, showing arytenoid and thyroid cartilages, vocal chords and thyro-arytenoideus muscle.

much the same in the boy and girl, but with the onset of puberty the larynx becomes more prominent as the cartilages become thickened and enlarged. The vocal chords and structures lengthen, and in the male throat the larynx settles until it is about opposite the sixth vertebrae, while in the female throat it is slightly higher. Accompanying these changes in the male larynx is a change in voice. So great is the embarrassment

caused by these changes, particularly if undue attention is directed to it by friends and relatives, that the boy becomes self-conscious and may in some cases begin to stutter. Ridicule of a boy at this period should not be tolerated in the home or in the school. (4)

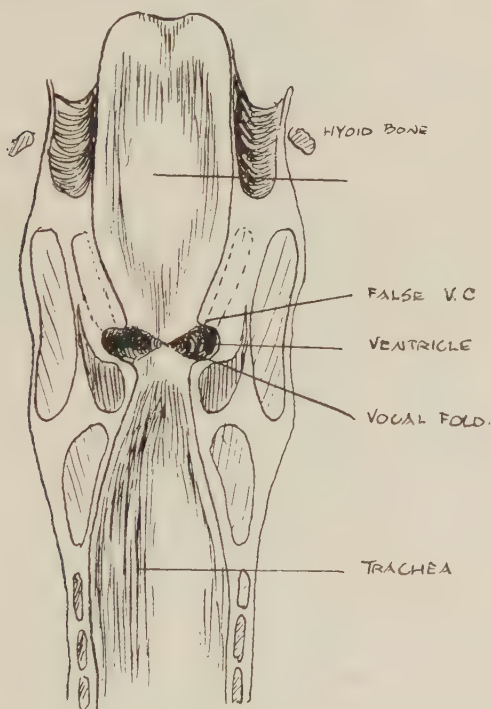


FIGURE 3.
Half-section of larynx, showing ventricles, vocal folds and false chords.

Production of Speech Sounds.

As the arytenoid cartilages pivot or rotate inward and backward, they tense or tighten the vocal chords, bringing them together. This movement of the cartilage is brought about by the thyro-arytenoid muscle

acting with the anterior crico-arytenoid muscle, and the posterior arytenoid. The cords are then in a position for producing tone. (Figure 9.)

To separate or abduct the vocal cords, an antagonistic set of laryngeal muscles comes into play. These are the posterior crico-arytenoids, which rotate the arytenoid cartilages forward and outward, and so slacken or relax the vocal cords. The action of the

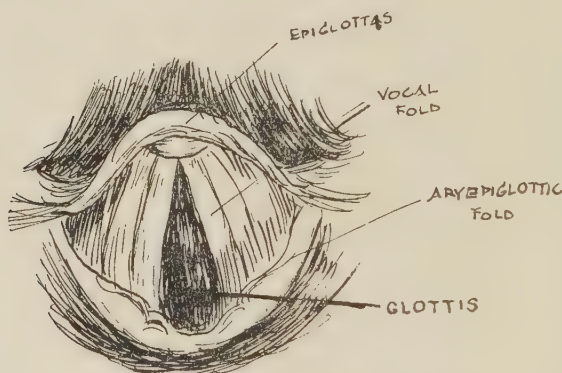


FIGURE 9.

Showing partially approximated vocal chords, glottis, and epiglottis.

lateral and vertical portions of the crico-thyroid muscles is to relax the vocal cords. (Figure 10.)

Nerve Supply to the Larynx.

THE chief nerve branches are from the Vagus or tenth cranial nerve, which gives off a branch known as the superior laryngeal. This supplies the mucous membrane of the larynx and terminates in the crico-thyroid muscle. One branch of this nerve is sensory, another is motor in function. Alterations in the nerve impulses to the laryngeal muscles affect the tone.

Somewhat lower down, in the throat region, the

Vagus or tenth nerve gives off another branch known as the recurrent laryngeal, which turns forward and

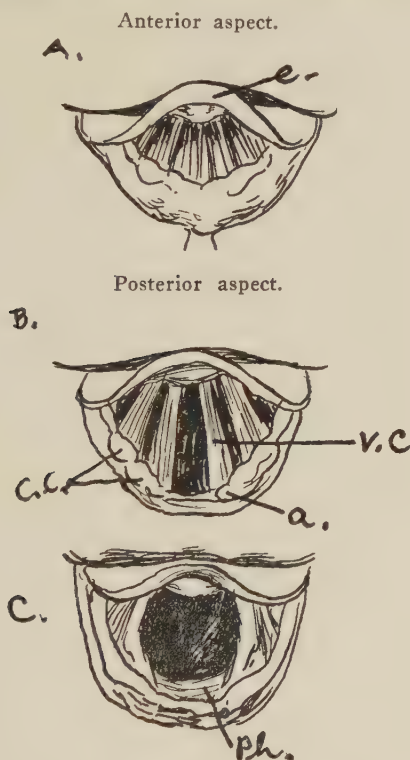


FIGURE 10.

In A the vocal chords are completely approximated as in speech or song. B, partially approximated as in quiet respiration. C, open glottis, and chords relaxed as in deep breathing.
e., epiglottis; v. c., vocal chords; ph., pharynx; c. c., corniculate and cuneiform cartilages; a., arytenoid cartilage.

upward to supply the intrinsic muscles of the larynx. It is both sensory and motor in function. (6)

Injury to the nerves, as in the case of paralysis, infantile paralysis, cerebro-spinal meningitis and hemiplegia may cause the patient to lose the power of ad-

duction (i. e., he can no longer approximate the vocal chords and close the glottis), or to lose the power of complete abduction (i. e., he cannot relax the vocal cords as in ordinary respiration, so they remain partially brought together.)

The sounds produced by the human voice may cover a range of about three and a half octaves. The majority of singers rarely attain more than two to three octaves. The speaking voice in ordinary conversation, should easily cover an octave in pitch variations, yet many speakers seem to use a much more limited range. (8) The monotony of the "school-room voice" is too well known to call for comment.

Some physiologists maintain that the action of the lateral slip of the crico-thyroid is to *tense* the vocal cords, as it pulls the cricoid and the thyroid cartilages forward and downward. They also maintain that the action of the thyro-arytenoid muscle is to *relax* the vocal cords by approximating the arytenoid and the thyroid cartilages. It seems to be an open question as to just how the muscles function in the production of tone. While it has formerly been accepted without question that the vocal cords vibrate *in phase*, recent experimentation has shown that the cords probably vibrate in alternation, rather than in identical phase. Recent experiments by West support the latter theory. (12)

The intrinsic muscles of the larynx are those already mentioned, viz :—the posterior arytenoid, the posterior crico-arytenoid, the lateral crico-thyroid, the thyro-arytenoid and the crico-thyroid.

The manner in which voice is produced and the exact action of the muscles and nerves concerned are not definitely known. (1)

*The Mechanism of Speech.**Resonation.*

THE chief resonators of tone are the cavities of the nose, mouth and throat including the ventricles of the larynx. The chest cavity, dependent for its size and shape upon the action of the intercostal cartilages and the diaphragm, plays an important part in speech resonance.

Nasal Resonator.

THE nasal cavities reinforce the sound waves. The amount of air inhaled or exhaled is determined by the action of the velum-palati (or soft palate) and of the intercostal muscles and diaphragm.

The nasal bones, two in number, form the bridge of the nose. Extending inward towards the septum from the palatal bones and superior maxilla are small scroll-shaped bones, three on each side, called the superior, middle and inferior turbinate bones. Between the middle and inferior turbinate bones is a space known as the middle meatus which forms the inspiratory portion of the nose. The portion above, the superior meatus, or space in the region of the superior turbinate bones, is the olfactory portion concerned in smell. The tissue here is very vascular, warming and moistening the air. It is supplied also with mucous glands to prevent dust particles from passing into the lungs.

Abnormal Conditions of the Nasal Passages.

IT is important to exercise good nasal hygiene. The nostrils may become unduly sensitized from intermittent and frequent colds, so that not only is the membranous tissue itself easily inflamed, but the turbinate

bones may become affected and a hypertrophied condition or permanent enlargement take place, which will obstruct the nasal passages and modify the nasal resonance.

In the posterior nares are glands of lymph tissue, known as adenoid vegetations, which in a normal state exercise a protective function for the mouth and throat. If they become hypertrophied and permanently enlarged or diseased, they not only interfere with nasal resonance and the activity of the soft palate, but by infiltration they often inject into the blood stream, disease germs which may eventually affect the health of the individual. The roof of the mouth is formed by the hard palate which terminates posteriorly in the soft tissues that form the soft palate and uvula. The velum or posterior portion of the soft palate controls the opening into the posterior nares of the nasal cavity, and so regulates the amount of nasal resonance used in tone production. High pitch requires a smaller resonator than low pitch. Therefore the entire larynx is raised higher by the action of the laryngeal muscles, in producing high-pitched tones, than in tones of low pitch. In the production of low tones the larynx is lowered by the contraction of both the vertical and the oblique portions of the crico-thyroid muscles. This is recognized in various "methods" of training the singing and speaking voice, the mechanism of respiration receiving much attention both for regulating volume of tone and for its effect upon vocal quality or "timbre". (8)

Palatal Structures. (6)

THE two palatal bones are roughly L-shaped, and join the superior maxilla bone, forming part of the

lateral wall of the mouth, the floor of the nasal cavity, and the posterior third of the roof of the mouth. (See Figure 12.)

That portion of the hard palate known as the palatal process projects downward from the junction of the basal surface of the skull and the facial surface. It extends backward to an imaginary line passing between the first and second molar teeth. It forms the anterior two-thirds of the roof of the mouth. The anterior or premaxillary portion sometimes fails to fuse with the maxillary portion, and leaves a cleft in the upper lip, which is called hare-lip. Sometimes the two maxillary portions fail to fuse and a cleft palate results. It may be an anterior or a posterior cleft, a single or a double cleft. When the cleft divides the bony process completely, for some distance, so that there is an opening into the nostrils, the speech becomes nasalized on practically all the vowel and consonant sounds. The cleft sometimes penetrates the uvula, so that the uvula is either missing or bifid. This also affects the quality of tone, as the posterior curtain, which ordinarily shuts off nasal from oral resonance, is missing or deformed. Operations performed upon infants within a few months after birth are usually highly successful. When the cleft is closed before speech habits begin to be formed, the speech is normal. If the cleft persists into adulthood, it is very difficult to entirely remove traces of nasality, even when an obturator is placed in the mouth, or the cleft drawn together by means of operative surgery. In such cases undesirable speech habits have been practiced for many years, and it is difficult to eliminate the nasality. There have been a number of highly successful closures of the palate in adults with consequent removal of ex-

cessive nasality in speech, but in these cases a carefully constructed obturator has usually been prepared and inserted, or the cleft has been narrow enough to enable the tissues to hold. The bony process has been

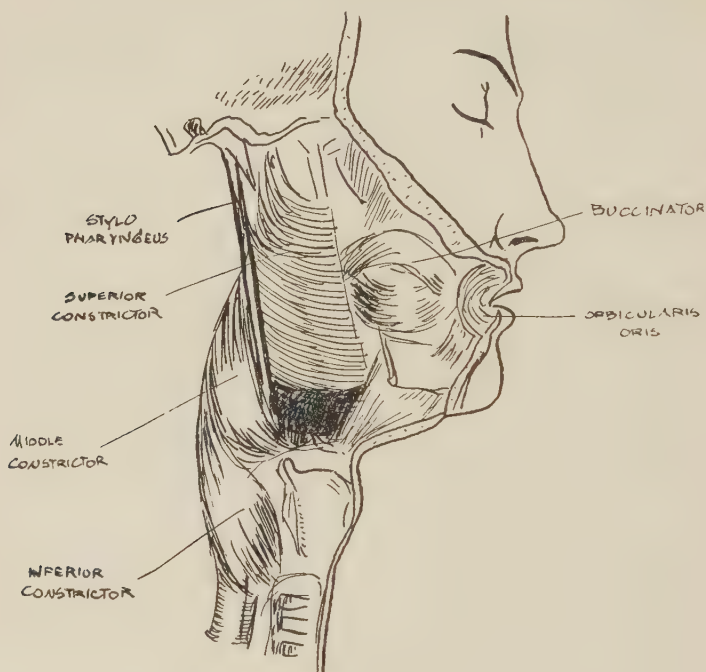


FIGURE 11.

Showing important muscles concerned in moulding tone into words. The constrictor muscles are especially important in their action, in cleft-palate speech.

approximated by the use of silver wire, and the scar tissue has formed across the aperture so that no nasal aperture remains. In some cases the activity of the constrictors of the pharynx seems to aid materially in the production of tones free from excessive nasal resonance. In this case it is probably the superior constrictor, chiefly, which by training, alternately con-

tracts and expands more actively than is ordinarily necessary. By this action it constricts some of the palatal muscles and narrows the posterior opening to the nares, directing the tone into the oral cavity. It is impossible therefore to say that an adult can or cannot be helped with or without surgery, until one has studied the individual case, as much depends upon muscle tonus, power of the superior constrictor of the pharynx and the size and shape of the cleft. (Figure 11.)

The production of Articulate Speech. (9)

It has been shown how tone is produced by the vibration of the vocal cords when set in motion by the air particles released in expiration. It has been shown also that these tones are resonated within the cavities of mouth, throat and nose and that the resonance is further modified by the size and shape of the chest cavity. The sounds which constitute human speech are called vowels and consonants. "Vocal Habits" (10) take precedence over articulate speech habits. Early speech sounds are called spontaneous emotional responses to the environment. (1) Imitation, if present, Allport holds to be purely accidental in the early speech sounds. Easy mouth positions lead to the accidental production of consonant sounds in the early months, so that we hear such consonants as p, b, m, (labials), ng, g, k, (back tongue sounds), aspirate h, semi-vowels w and y. (3) The child rapidly discovers that speech is a mode of behavior which enables human beings to communicate rapidly and to control to some extent their environment. The social stimulation therefore impels him to translate these spontaneous and random articulations into serviceable symbols like those which he

hears about him. It is a long time, however, before he forms the necessary associations between things *seen*, and the name which he *hears* applied to them. The auditory and visual sensory areas of the brain must be linked by paths of communication or *association fibers*, before the child can repeat at will the sounds which he hears. Repetition of the first syllable of a word is frequently the child's first attempt at *tagging* or identifying an object by name. "mi, mi, mi" for milk, and ki, ki, for kitty are familiar stages in the speech development of many infants. Sounds produced at random in the early speech stages are possibly responses of the second level (or second trophic realm), as it is possible to make them without the action of the higher brain centers. (1) The auditory pathways within the brain stem and cerebellum may send motor impulses to the organs of speech without involving the higher brain center at all. Such responses have been observed in the insane, feeble-minded, and aphasic patients.

That the ear plays a major part in the fixation and reproduction of speech sounds seems evident from the fact that mutism results in deaf children reared without special speech training. Lacking audition, the deaf child is usually trained in a special school where kin-aesthetic sensation replaces the defective hearing. In the Vibro-Tactile Laboratory (*) Dr. Gault has made an important discovery in regard to cutaneous sensations. He has shown that touch may play an important part in the understanding of speech sounds and in the education of the deaf.

Blind children often show retardation in talking as

*Gault, R. Fingers Instead of Ears. Welfare Mag. Illinois, 1927 Sept. pp 3-10.

in walking. It is probable that the eye plays a more important part in the development of speech sounds than psychologists have formerly believed. In the normal child visual stimuli are important in both locomotion and articulation. Without these stimuli, the blind child may lack those incentives to action, locomotion and social expression which are present in the seeing child. The stimulation received from the gesture language of face, eye, lip, mouth, hand, torso and other expressive agents of the body, are not perceived by the blind child, and we therefore see a greater passivity, less play of expression, more restricted gestures among them than among seeing children. The writer in a survey of two of the largest schools for the blind, namely the Perkins Institution at Watertown, Mass. and the Pennsylvania School for the Instruction of the Blind at Overbrook, Pa. found considerable inactivity of the mouth, lips, and tongue, and more speech defects than would be found in an equal number of children of corresponding age, in the public schools.

Words are representative *forms* or *symbols* for objects. Various accounts of the development of language have been discussed in the first chapter. Success in communication of ideas and in obtaining satisfaction for his wants early "condition" the child's responses and place a premium upon his acquiring the names of other interesting objects in his environment. His social success depends in a measure both upon word-understanding and verbal communication of his ideas to others. These two abilities satisfy his own desires and control his environment, and both of them involve the use of other parts of speech than substantives and action words.

The Oral Agents.

LET us now consider the *mechanics* of sound modification, by means of the oral agents. The vestibule or outer boundary of the mouth, which plays a part in the formation of vowels and consonants, is limited in front by the lips and cheeks, and internally by the teeth and alveolar processes. The size and shape of the

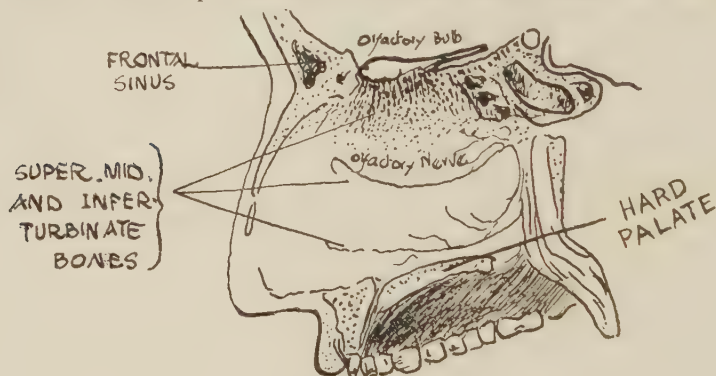


FIGURE 12.

Drawing showing nasal cavity, turbinates and nerve supply.

vestibule is dependent upon the general formation of the mouth, jaw and alveolar processes. In dental malocclusion the size and shape of the vestibule is considerably altered and thus affects the quality of the obstructive sounds. (the consonants.) (Figure 12.)

Just back of the dental arches lies the mouth or buccal cavity. The posterior boundaries of the mouth are formed by the pillars of the fauces and the pharyngeal wall. The roof of the mouth is formed by the hard and soft palate, and the floor by the mylo-hyoid muscle. The hard palate is the L-shaped bony portion previously referred to. The soft palate is attached to the posterior portion of the hard palate. The soft palate blends laterally with the walls of the pharynx,

but terminates posteriorly in a free portion called the uvula or velum palati. This frail portion of the soft palate is important because of the part which it plays in opening or closing the orifice leading into the nasal passage. A very slight injury may render this portion of the palate inactive and thus affect the speech. Pressure exerted by the suction action of the muscles in a child who is a thumb-sucker, or who is a victim of "pacifiers" has been said by throat specialists to be sufficient to cause the soft palate to become inactive. Pressure exerted by hypertrophied adenoid tissues pressing downward upon the palate, may cause a speech peculiarity which often persists even after the adenoid tissue has been removed. The soft palate has three sets of muscles, the *levators* whose function is to *raise* the palate; two *depressors*, and two *tensors*. Re-education of the soft palate is often necessary in cases where inactivity has affected the speech. Sometimes it is sufficient to touch the palate lightly with a tongue depressor, to cause the levators to raise it. If the oral and pharyngeal reflexes are very prompt however, this is not advisable. Activity may be secured by exercises similar to those used in nasality, provided the patient uses a hand mirror to see what is taking place, while he alternates oral with nasal sounds, as in "ah—ng—ah: ay—ung—ay: ee—ong—ee: oo—ung—oo", etc.

The Tongue.

WE have said that the floor of the mouth is made up of the mylo-hyoid muscle. Resting upon this, is the tongue, a large muscular organ, with a free tip, which divides the mouth into two portions, a sublingual and a supra-lingual portion. The tongue is usually relaxed

and allowed to rest against the hard palate, but in vocal training, in singing, and in speaking it is the custom to let the tongue lie like a rug on the floor of

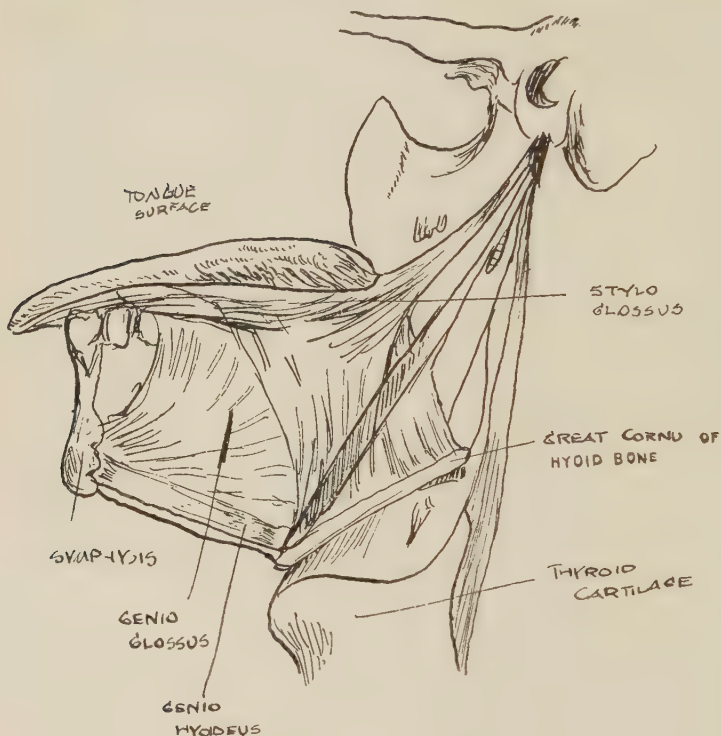


FIGURE 13.
Showing principal extrinsic muscles of the tongue.

the mouth, except when raised. This increases the size of the resonance cavity, and insures freedom from interference in tone production.

The tongue, like the larynx, has both extrinsic and intrinsic muscles. The intrinsic, within the tongue substance, are in three planes, the *longitudinal*, extending from tip to the back of tongue; the *horizontal* which

extend from the external borders of the tongue to the septum, (which divides the tongue into two portions); the *vertical* muscles which lie near the margins of the tongue. The action of the longitudinal muscles is chiefly to regulate the extension and retraction of the tongue. (Figure 13.)

The extrinsic muscles of the tongue are:

The *genio-glossus*
 The *hyo-glossus*
 The *stylo-glossus*
 The *palato-glossus*
Genio-hyoid.

They all arise outside the tongue and insert into its substance. The name of the muscle indicates its origin as well as its termination. (6)

Tonus of the neuro-muscular system as a whole seems closely related to the tongue activity in speech. When muscle-tonus is low, in general, we often have sluggish, inactive tongue action, and consequent negligent, slovenly speech. In many cases where negligent speech is found, low mental or physical tension seems to be reflected in the activity of the tongue musculature, more than in any other parts of the speech mechanism. In languages other than English, a good deal of dexterity in the use of the tongue muscles is necessary for clear differentiation between similar words. In English, speakers may be heard and understood with rather passive tongue action, although in the process the auditor is under a constant strain to hear and understand what is being said. The fact that greater effort is not absolutely essential to differentiating between sounds similarly made, as would be the case in French and German, for instance, seems to have

bred many tongue-lazy Americans who are passive in the use of the tongue in speech. They frequently fall far short of the incisive, distinct utterance of the natives of Great Britain, who speak the same language, but who fail to *use* the lips and tongue *actively*. (Figure 14.)

The Teeth.

THE teeth form double U-shaped arches extending from the sides of the mouth, forward, to fuse in mid-

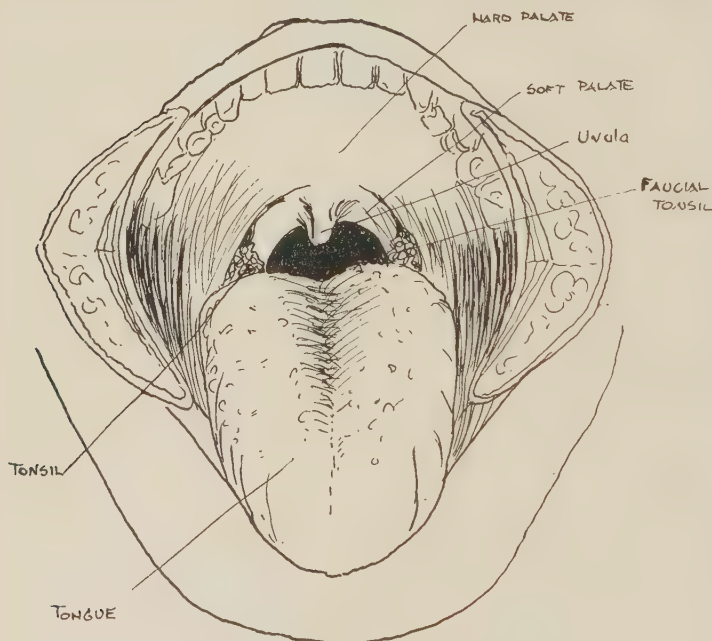


FIGURE 14.

The oral cavity and speech agents, lips, tongue, uvula, teeth, hard and soft palate.

line. Malformations of the jaw, prognathism, or an over-shot under jaw may develop. This modifies the size and shape of the resonance cavity of the mouth

and may cause a stiff, rigid tense jaw action, which gives an unpleasant quality to the voice. It may cause a lisp, as may also the protrusion of the upper dental arch. Wide interdental spaces between the teeth of either arch, and malocclusion producing only partial approximation of the two dental arches, often modify the vocal quality producing a lisp, or blurred, indistinct utterance.

There seems to be some relationship between the degree of intelligence of the patient and his ability to compensate for poor-dental occlusion. In many cases examined by Blanton* and others it has been found that where there is considerable malocclusion the speech may be excellent, while some cases having only mild malocclusion have very poor speech and have made little or no effort to enunciate more distinctly even though they know that such an attempt would improve their speech.

We believe that the same may be said of the relationship between intelligence and oral inactivities or sluggish tongue action. An intelligent child, with good auditory imagery will, in a few lessons, speak more distinctly and begin to carry it over into his speech outside the clinic. A person with less intelligence is often unaware that his speech differs from that of the people about him, and will make no direct application of the exercises and clinic practise to his speech outside the speech classes.

In clinical practise therefore it often seems more worth while to center one's energies upon the elimination of the poor speech habits of those who are capable of making rapid improvement, first, and to con-

*Blanton. The Medical Significance of the Disorders of Speech: Jour. A. M. A. July 30, 1921. Vol. 77, pp. 373-377.

tinue to work with the duller children only when it can be shown that they are capable of making some application of the principles of practise and the exercises. Every speech clinic has a large number of mentally deficient and dull-normal children with speech defects, who are brought for treatment. In these cases it is always a question how long the treatment should be continued, when progress is so very slow and difficult. There is no doubt, however, that special speech teachers in clinics and institutions can do a great deal to improve the speech of many retarded and deficient children.

Vowels and Consonants.

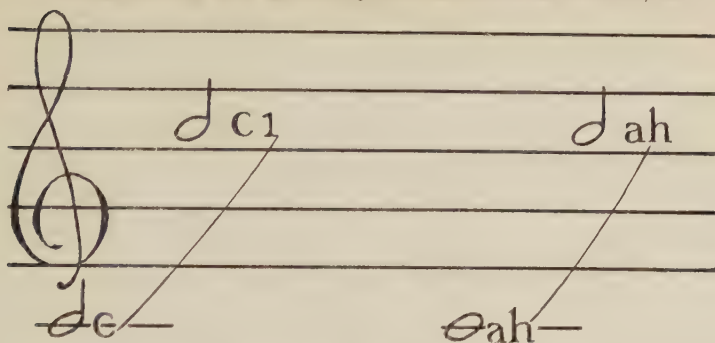
THE open, non-obstructive sounds in language are called Vowels, or tones. The obstructive sounds are called consonants, or speech noises. Consonant pitch and quality are determined by the size and shape of the resonance cavities, while the volume of sound depends upon the amplitude of the air wave set in motion by the act of expiration.

This brings us to the consideration of Sensory and Motor Speech Areas of the Brain which govern language habits. These will be found in the next chapter.

Exercises

1. Extend the range of your voice from middle C to C' above and below, using piano. Then speak, using an octave in your speaking voice counting from 1 to 8.
2. Train your ear to distinguish differences in volume of tone, taking each of these vowels in turn, A, E, I, O, U;
3. Practise quiet respiration noting amount of tidal air used at each inspiration. Measure by use of spirometer occasionally. This usually equals 500 cubic centimeters.

Begin softly and gradually increase volume of tone, as:—



Illustrate the scale from C to C¹ (above)

4. See how much you can breath in, over and above *tidal* air. This *complemental* air usually amounts to 1500 cc.
5. After a quiet expiration, see how much air you can force out of the lungs. This is called *supplemental* air and equals about 1500 cc.
6. Note that there is always a supply of air remaining in the lungs, known as *residual* air, which cannot be forced out.
7. Practise reading aloud ten minutes each day, using good diaphragmatic control of breath. Enjoy a sense of well-being and vigor and see that the exercises do not induce fatigue or "soreness" of the abdominal muscles, through misuse.
8. Establish your voice at an intensity, rate and quality which enables you to speak on without fatigue.
9. Try variations of tone in counting or chanting (numbers and vowel sounds) combining pitch variations and volume of tone.
10. Begin to speak at the height of the wave of inspiration, and just as you begin to expel the air from the lungs. Do not try to speak while you are *breathing in*.
11. The amplitude or loudness must be proportional to the size of the room or audience. Practise speaking in various ways, as if before a large audience in a large room (2) in a parlor, (3) in the street car (4) in a dance hall,

- (5) in a class room (6) in ordinary conversation with one or two persons.
12. Take a rational amount of exercise; practise deep breathing in your walking each day; speak slowly and distinctly first of all. As the voice becomes clearer increase somewhat in volume or loudness. Do not shout or strain your vocal muscles. Try to manage speech in an easy frictionless manner, otherwise you may induce congestion or inflammation in the larynx.
 13. Observe the rules given opera singers.
 - a. Use little or no alcohol nor dishes irritating to the throat.
 - b. Observe good hygiene of the mouth, nose and throat.
 - c. Avoid coughing as this induces congestion and irritates the mucous membrane of the throat.
 - d. Avoid fatigue before speaking to a large audience.
 - e. Three hours should elapse between mealtime and the exercise of the voice in singing. (or speech-making).
 - f. Tobacco is detrimental to the throat. Cigarettes tend to produce hoarseness and are especially bad for tenor voices. Avoid dust and smoke. Avoid excessive speaking in open air, or in rapidly moving trains.
 - g. Breathe pure air and keep your rooms well ventilated both sleeping and waking. Frequently renew the air.
 - h. Remember that whatever contributes to general health tends to improve or favor the condition of the vocal apparatus.
 14. To extend breath control practise counting as follows:—
 - a. Take a deep breath and count from 1 to 5 on outgoing breath.
 - b. Take a deep breath and count from 1 to 10 on outgoing breath.
 - c. Count to 15 on one breath; to 25.
 - d. Count as high as you can on one breath.
 - e. Say the alphabet on one breath.

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Chapter IV

SENSORY AND MOTOR SPEECH AREAS OF THE BRAIN

It is necessary for our understanding of the brain areas concerned in speech, that we should review briefly the structure and function of the nervous system including the brain and spinal cord.

Sensory and Motor Neurones.

THE functional unit of the nervous system is a pair of neurones, one sensory the other motor. One re-

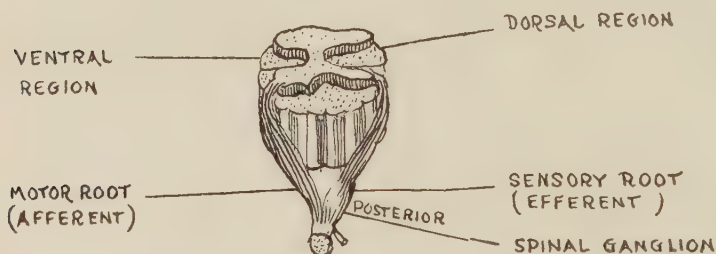


FIGURE 15A.

Segment of spinal cord, showing a typical spinal nerve with motor and sensory roots.

ceives the sensory stimulus from without the organism, by means of the sense organ at the peripheral end of the nerve for sensation. Such a sensory fiber is called *afferent*, as it leads *towards* a nerve cell within the spinal cord or brain. The motor nerve fiber *discharges* an impulse and results in some form of behavior in response to the stimulus already received. This is called an *efferent* or motor nerve fiber, as it transmits

POSTURE DIAGRAM

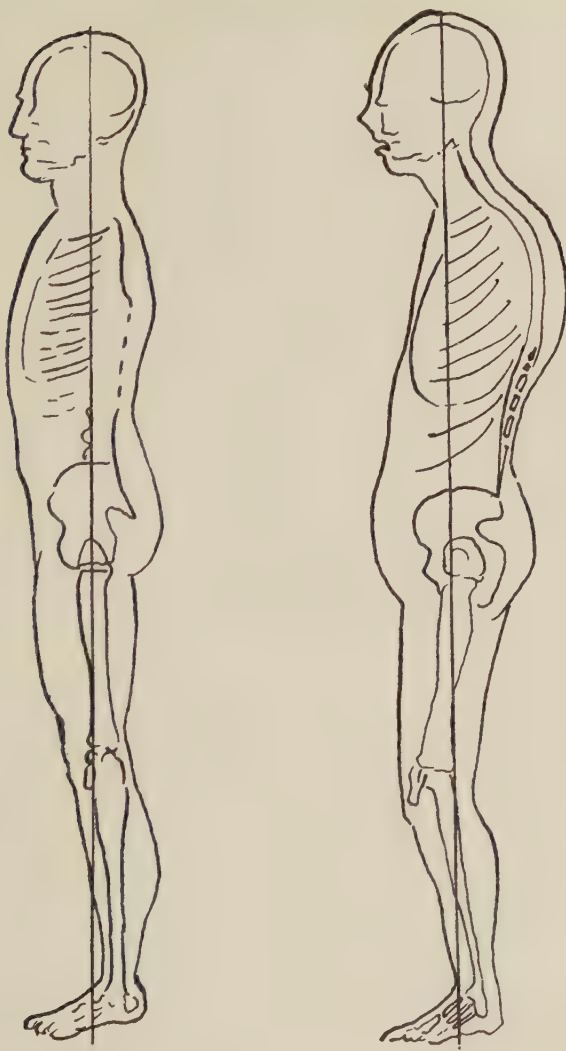


Fig. I.
Correct Posture.

Fig. II.
Incorrect Posture.

FIGURE 15.

the impulse to the muscles or glands which respond. Such a functional unit has been called a "reflex-arc". In higher animals there is interposed between the two a third connecting neurone called the central or associating neurone, which conveys the excitation from the sensory or dorsal region of the cord or brain stem to the motor cells, the latter occupying a ventral or anterior location either within the cord or the brain stem.

Types of Response.

CERTAIN responses have a *protective* and *regulative* function, and since they are aroused involuntarily upon the application of the appropriate stimulus, they are called *reflexes*. This is the simplest type of response involving the spinal cord, and lower portion of the brain stem. A reflex is commonly called a response of the *first level*. More complicated responses involving the cerebellum and brain stem, are called *second level responses*, as they are more complex, and usually associated with acquired or learned reactions. Responses involving the higher brain centers, the cerebrum with its super-motor centers and sensory-perceptive areas, are called responses of the *third level*. Probably most of the so called "instincts" are modified from the moment of their first appearance by the action of these higher brain centers, as learning and experience very early begin to "condition" the child's reactions. (10)

Early Speech Attempts.

EARLY attempts at speech seem to utilize chiefly the nerve tracts of the second level, when random and accidental movements of the oral mechanism and vocal chords, produce chance vowel and consonant sounds,

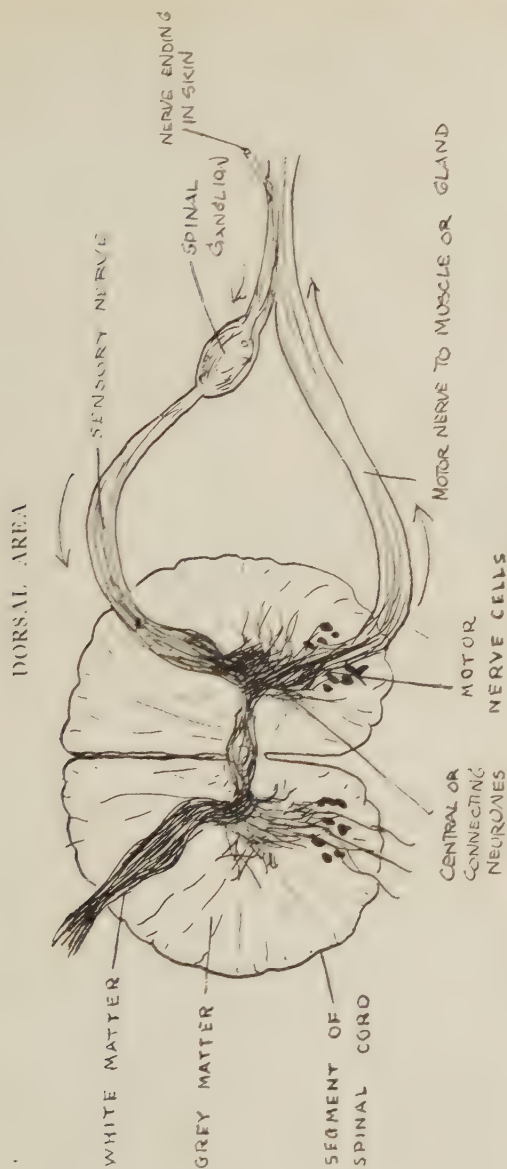


FIGURE 15B
Ventral Region. Showing section through the spinal cord. (diagrammatic).

without appreciation of their meanings. The auditory impulse is in this case conveyed to the brain stem, and impulses are then conveyed to the motor speech mechanism, so that a "mechanical" response seems to take place as a result of certain auditory stimuli. This corresponds to an automatic, second-level reaction.

That the human child possesses the ability to initiate

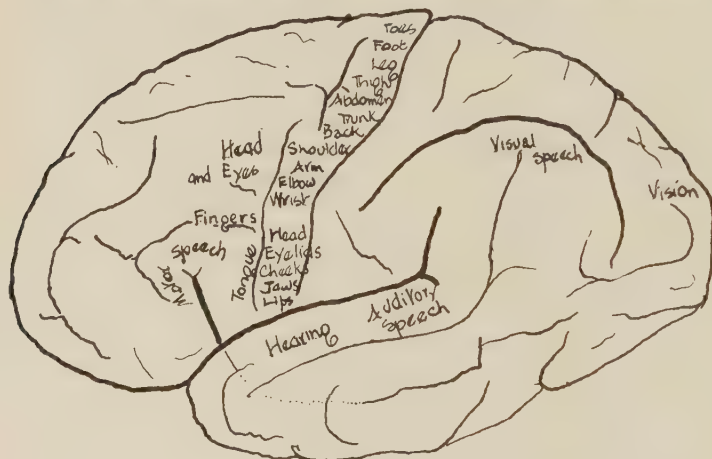


FIGURE 16.

Left hemisphere of the brain, showing principal motor areas.

sounds closely resembling speech, is apparent often as early as the fourth month. Mrs. Blanton (2) found many consonant and vowel sounds in the babbling of infants during the first thirty days of life, although they are not combined into words until around the age of a year to a year and a half. The muscular equipment for producing speech sounds is evidently present at birth, but the cerebral control which depends upon further mental and emotional development, must be developed in response to environment, sensory stimulation, and mental and physical growth. The early speech sounds seem to be due to accidental movements

of the oro-extrinsic speech musculature, chiefly, and peripheral control develops with mental and physical growth, until sounds are spontaneously produced or imitated. Eventually these motor-speech-audio-speech memories become fixed in the auditory-psychic and motor-speech areas of the brain and can be reproduced at will. The auditory and motor speech images must

ASSOCIATION AREAS OF THE CEREBRUM

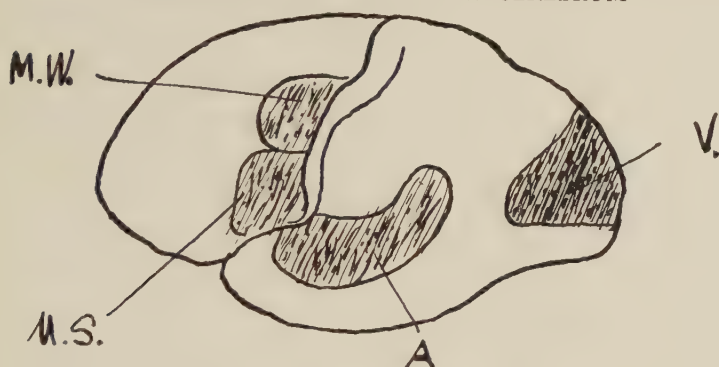


FIGURE 17.

M. S., motor speech area; M. W., motor writing area; A., auditory-sensory area; V., visuo-sensory area.

agree, before a phonetically correct sound is assured. In learning to talk, the child draws upon the auditory-sensory area, the motor speech area, and probably to a much larger extent than has been generally believed, upon the visuo-sensory area, as sight associations seem to play an important part in the speech development of many infants whom we have observed. Blind children often talk later and with less phonetic accuracy than do seeing children. We therefore maintain that vision is important in the normal speech development of the child. (Figure 16.) (See figure 22, showing visual field.) Page 93.

Under the guidance of the super-motor centers, the

child forms associations between sounds *heard*, objects *seen*, and the names applied to these. Spontaneous and imitative movements of the mouth and laryngeal muscles under the guidance of the intellect, leads to *mouth moulds* and vocal *action* which produce at length the desired result. The accuracy of muscular action, and the effect of social approval and success in making himself understood, leads the child to the development of highly educated motor speech, audito-psychic, visuo-psychic memory centers for *sounds spoken*, sounds *heard* and objects *seen*. The infant soon learns that he must not only *understand* the sounds which he hears, but must *reproduce* them, if he is to gain the coveted attention of elders and playmates at will, and if he is to manipulate his environment satisfactorily. (10) (Figure 17.)

Individual Variations.

THAT there are great individual differences in speed of acquiring a vocabulary is certain. Children of the same family do not progress at the same rate, and children in different families vary even more widely in speech learning process. The home attitude is important in impelling the child to talk. If a child's wants and impulses are anticipated so that his desires are realized even before he is impelled to seek satisfaction, he soon finds that speech is of secondary importance. His mother or nurse anticipates his slightest wish even before it is fairly expressed. Such a child will often be delayed in the speech learning process, and unsocialized beyond the period when most children talk a great deal, because the home environment has pampered and coddled him, instead of impelling him to

make his wants known as do other children in the environment. Many cases of infantile perseveration in later years, may be traced to the conditions which surrounded the child when he was learning to talk.

The Forming of Associations and Beginnings of Memory.

WE must next consider the higher brain centers, between which associations must be formed, and connections established before the child can perceive or understand the nature of stimulating objects. The child must not only *receive* sensory impressions from *without*, but he must *perceive* or *interpret* them, and then *choose*, from a number of possible responses, the one which he shall make, in a given situation. This involves the organization and storing of memories of words *heard*, and a little later of words *seen*. The regions chiefly involved in acquiring a vocabulary are the *auditory-sensory* and *auditory-psychic* areas in the superior portion of the temporal lobe; and the *visuo-sensory* and *visuo-psychic* areas in the occipital lobes of the brain. These sensory areas, laterally and posteriorly located in the cerebrum are the store-houses for words *heard* and for words *seen*. Impulses from these areas are carried over, by means of association fibers, to the motor speech areas in the frontal lobe, and to the general motor areas in front of the fissure of Rolando. An impulse is then transmitted to the motor speech areas, and then is next communicated to the motor fibers controlling the peripheral speech agents such as the lips, tongue, soft palate, and vocal cords. The motor speech center however shows this peculiarity,—it is located *on one side only*, opposite to

the preferential hand. In right handed persons therefore, the motor speech area is located in the posterior part of the third frontal convolution, on the left side only. (6) (See Figure 16.)

It is not necessary for our understanding of speech activity that we should review the structure and function of the entire nervous system. Briefly, we may say that the peripheral nervous system consists of 31 pairs of spinal nerves which supply the protective and supporting structures of the body; and which are attached to the spinal cord by two roots, an anterior or motor root and a posterior or sensory root. The second portion of the peripheral nervous system is called the *autonomic* or *sympathetic* nervous system, and is distributed to the smooth muscles or glands such as the organs of digestion, respiration and circulation. The latter seems to be largely regulative or protective in function and is closely related to the emotional life of the individual.

The Brain and Spinal Cord.

THE spinal cord with its thirty-one pairs of nerves is incased within the bony framework known as the spinal column. (8) At the upper border is the brain stem, consisting of the pons, the medulla oblongata, and the cerebellum or old brain. The cord and brain stem terminate below the greatly enlarged portion known as the cerebrum or brain proper. In proportion to body size, the whole human brain weighs more than that of any of the lower animals, excepting the elephant and the whale. The brain increases rapidly in size from birth to the seventh year, more slowly between sixteen and twenty, more slowly yet between

CENTRAL NERVOUS SYSTEM

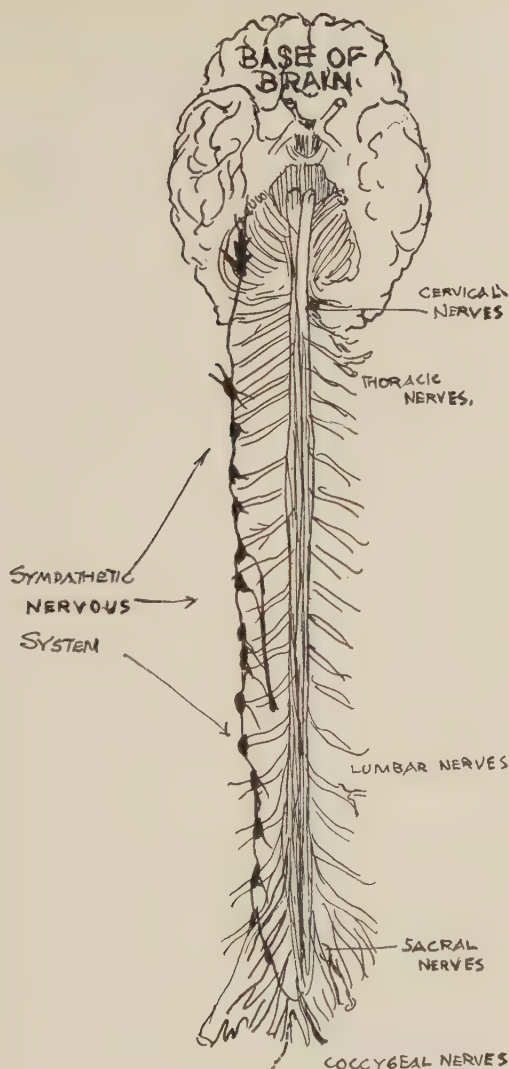


FIGURE 18.

Brain and Spinal Cord (under surface) ; showing the central nervous system with its cerebro-spinal nerves; drawn in black is the sympathetic nervous system, and ganglia, which send their impulses into the central nervous system.

thirty and forty, and attains its maximum growth at about the fortieth year. (Figure 18.)

The cerebrum is roughly divided into two sections by a deep median fissure. These sections are called hemispheres and each hemisphere is again subdivided into four lobes, the frontal, parietal, temporal and occipital. The cerebrum is not a solid mass, but each

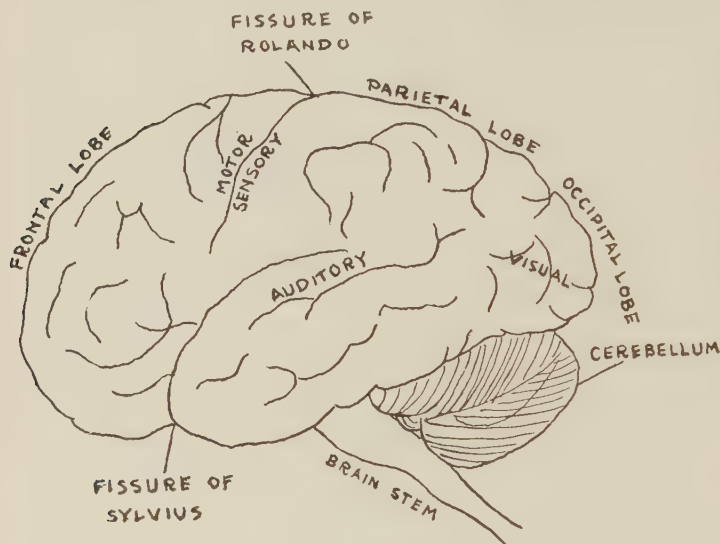


FIGURE 19.

Lobes and fissures of the brain.

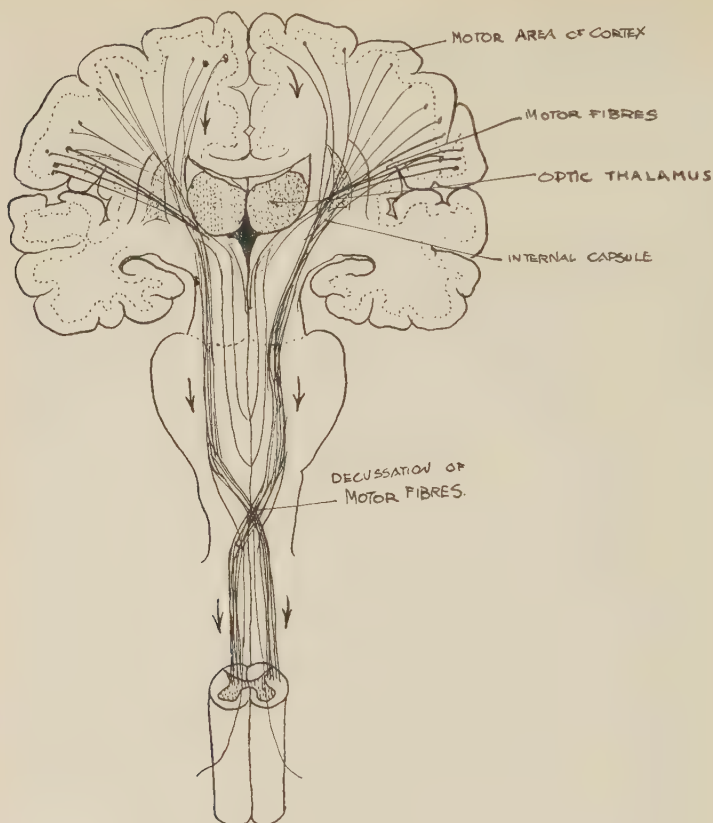
hemisphere has within it a central opening or ventricle which connects with a hollow tube running the entire length of the spinal cord. In health these ventricles contain only a small amount of fluid but in certain brain hemorrhages and febrile infections the pressure exerted by an increase in the amount of the fluid may have serious consequences, sometimes injuring the brain substance with fatal results to speech development. (Figure 19.)

Lobes of the Brain.

THE lobes of the brain contain the neural bases for the motor and sensory functions involved in vision, audition, kinaesthetic and bodily sensation, and for our acts of will, judgment, intelligence, memory, reason and imagination. As a result of animal experimentation certain functions have been localized, within these lobes. We know that the anterior region in front of the fissure of Rolando is motor in function; that the area posterior to the fissure of Rolando is the sensory area for bodily sensation. The posterior portion of the cerebrum, called the occipital lobe is concerned chiefly with visual sensation and the storing of visual memories. In the region of the temples, and above the ear, located laterally, are the temporal lobes which function in the analysis of sound. The motor and sensory areas are connected by means of deep-lying fibers called the *conduction paths* or *association fibers*. The motor and sensory areas are superficially located within the brain cortex, forming the external portion of the cerebrum, or the *gray* matter. The conduction fibers lie *beneath* the cortex and appear *white* in dissection, as they are made up of bundles of nerve fibers connecting the various parts of the brain. (9)

Motor Areas.

THE chief motor center of the cerebrum contains a large number of giant pyramid or motor cells, situated within the brain cortex or outer layer of gray matter. If one can visualize an inverted manikin placed upon the outer brain surface, extending from the upper central region of the head, downward towards the ear, one may grasp more easily the idea of localization



(Arrow shows direction of motor impulse)

FIGURE 20.

The Motor Tract. (Adapted, after Poirer.) Showing the descending motor fibers, which pass from the cerebral cortex, through the internal capsule and mid-brain to form the great pyramidal tract. The pyramidal tract passes through Pons and the Medulla, the crossing or partial decussation of fibers taking place within the medulla. About 75% of the fibers cross to the other side at this level, the rest continuing down on the same side, into the spinal cord, where they later cross to the opposite side. Thus all the motor fibers coming down from the cerebrum eventually cross to the side opposite the hemisphere from which they are derived. If the area of the left hemisphere of the cerebrum is stimulated, the muscle response will take place on the opposite side of the body.

of function within the motor and sensory areas. Uppermost is the region for the feet and lower extremities then comes the region for the thigh and trunk. Lower still lie the centers for arms and chest segments of the body, lowest of all, near the region above the ear, are the centers for facial muscles, tongue, lips, and mouth. Thus, the motor area *in front* of the fissure of Rolando, and the sensory area for bodily sensation, behind the fissure of Rolando, are tangent to the motor speech area which lies within the posterior part of the third frontal convolution, and above the fissure of Sylvius. The motor center for the wrist, hand, and arm lie above and contiguous to the motor speech area. This is important in forming associations between written language and motor speech activities involved in spoken language. (Figure 20.)

As a result of the interdependence of the sensory and motor areas of the brain, much depends upon the integrity of the centers. Coördination of movement, highly skilled performances, such as those involved in reading, writing and speaking, and the thought processes are regulated in the higher brain centers.

Some *clinicians* have held that the frontal lobes were the seat of attention and inhibition, as well as being primarily concerned in forming associations by means of the motor areas. According to Howell, (6) it is in this part of the brain that the conception probably arises of individuality and the idea of the self as distinguished from the external world. Alterations or defective development of this part of the brain may explain much mental and moral degeneracy. Franz (1) holds that there is little or no proof of the fact that the frontal lobes function in attention and inhibition, but from his experiments with apes he concludes that

the frontal lobes are chiefly concerned in normal, daily, association-forming habits, and function in learning generally. Language calls into play the highest functions of the cerebrum. In the beginning, gesture and sign language undoubtedly preceded spoken language. Simple signs were gradually displaced by "short-cuts to action" in the form of a word-signs, or symbols, which displaced the sign language. The lack of articulate speech and written language places even the higher apes far below the mental plane of man.

Origin of Ideas.

How do ideas originate? How do they spread or relate themselves to other ideas and past experiences? First of all an impression must be received by means of sensation. Sensations arouse memories of past experience, and are recognized or classified on the basis of learning, experience or perception. Words, or symbols which stand for ideas are stored in the sensory areas for vision and audition, and in the motor speech area, whence the impulse to speak goes down over the motor pathway.

In the occipital lobe we have the visuo-sensory or receptive area which functions in learning to read, and associated with it we have the visuo-psychic or perceptive area for vision. In the temporal lobe, is the audito-sensory or receptive area for auditory stimuli and above it, the audito-psychic or perceptive area for sound.

Connecting these centers and uniting them to the motor speech and writing centers are the conduction paths or association fibers, beneath the cortex. In the frontal lobe, we have the motor speech center and the

motor writing center. Any interference with the motor speech center, the motor writing center, the association pathways, the visuo-psychic or audito-psychic areas results in a condition known as aphasia.

Disturbances of articulation due to cerebral lesions are known as aphasia. When accompanied by true paralysis they are called anarthria. Aphasia is of two general types, sensory and motor. When the lesion is within the gray matter of the cortex, the disease is known as *cortical aphasia*; when the lesion is within the association areas or conduction pathways, it is known as *sub-cortical aphasia*. (7)

Sensory Aphasia.

1. *Auditory.*

THE patient may be able to hear, but unable to interpret or to understand the sounds heard. In this case the injury is to the audito-psychic area, or perceptive area for sound. It is often called word deafness, even though the patient shows by unmistakable signs that he is not deaf, but that words formerly familiar to him have lost their meaning. It is as though someone were speaking to him in an unknown tongue. This is auditory sensory aphasia. Paraphasia is often present, causing the words used to be meaningless, wrongly applied or jargon. (Figure 21.)

2. *Visual.*

The patient may be able to see, but be unable to interpret words upon the printed page. He can no longer read written or printed words, even though he still is able to see them. The words have lost their meaning and he can no longer understand them. This condition is known as "word blindness," although the

patient is able to see. It is also called sensory aphasia of the visual type.

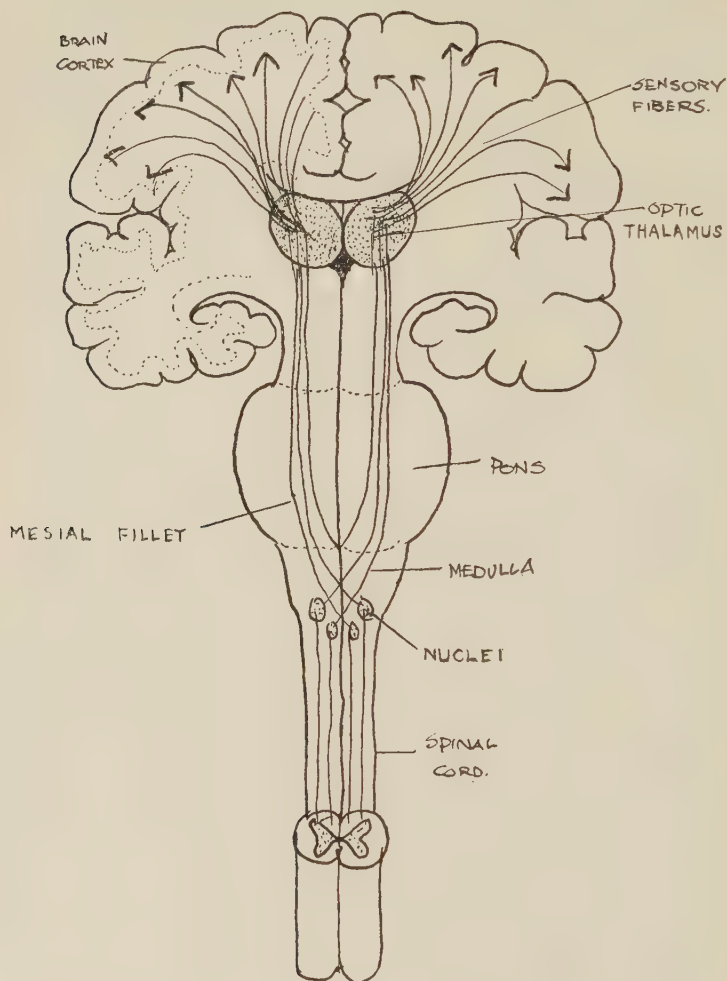


FIGURE 21.

Sensory Tract. (Adapted, after Poirier.) Showing incoming sensory fibers, with their nuclei in the medulla and pons; the mesial fillet passes to the optic thalamus; from the cells of the thalamus, fibers penetrate to all parts of the cerebral cortex, conveying sensory stimuli.

3. Associational Aphasia.

If the association areas for uniting the auditory and visual word memories are injured, the patient can still

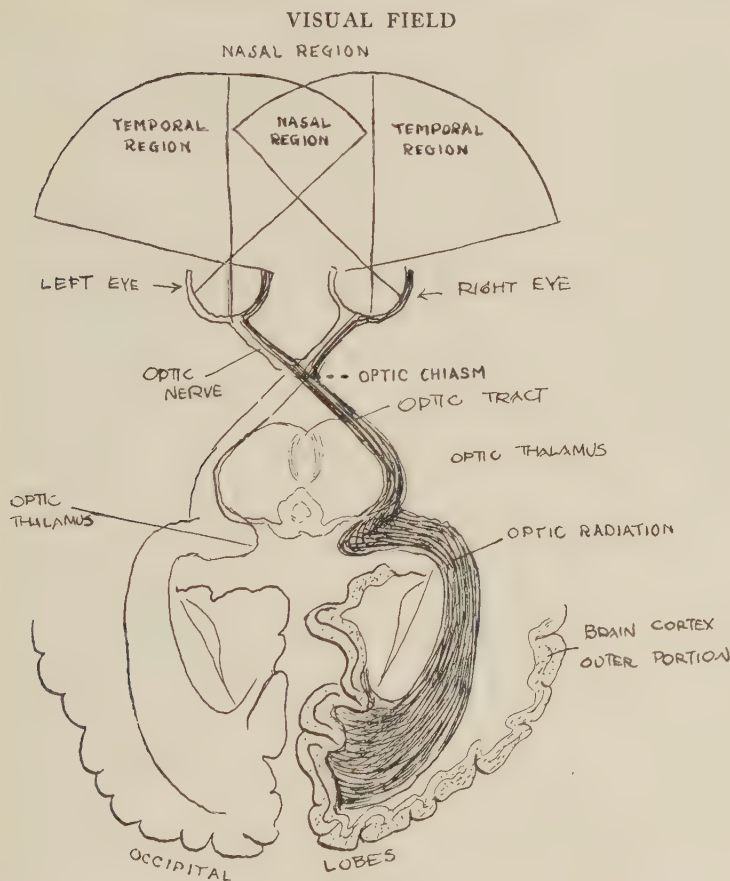


FIGURE 22.

Showing visual field, optic nerve and optic radiation, the optic nerve transmitting the visuo-sensory stimulus to the optic thalamus, and thence to the occipital lobes where visual perception takes place.

understand the words spoken and read the printed words, but he cannot associate sounds and symbols

so as to form ideas, and therefore loses the power of expression. In sensory aphasia the patient may be able to write from dictation, to copy from manuscript, or to repeat words spoken to him, but the power of interpretation of printed symbols or words spoken to him, is lost. This type of aphasia is known as *word-dumbness*. (9) (Figures 22 and 23.)

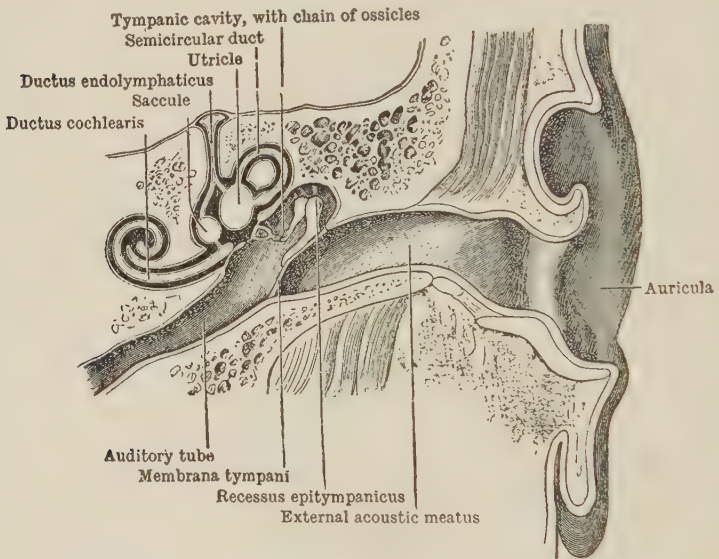


FIGURE 23.
Diagrammatic view of the parts of the human ear. (From Cunningham's Anatomy.) By permission.

Motor Aphasia.

UNTIL recently Broca's claim that the posterior portion of the third frontal convolution contained the center for articulate speech, was accepted without question. Broca believed that the center was located in the left hemisphere, for right handed people, and in the right hemisphere for left handed persons. Injury to Broca's area was said to produce motor aphasia; that

is, the patient might be able to speak, but his words became confused jargon, meaningless, or he used inappropriate words, misplaced syllables, gave senseless sounds, or lost the power to speak spontaneously or to repeat. Pierre Marie, the French clinician says that all forms of aphasia are due to interference in the association areas, of the *posterior* portion of the brain. He claims therefore that motor aphasias are the result of injury to the cortical and sub-cortical association areas. This he calls aphasia proper. Various authors call attention to the lowering of the intellectual powers following an attack of aphasia. In *motor* aphasia the patient *understands* words spoken and can *copy writing*. There may be no paralysis present, nor is the patient necessarily dumb. The kinaesthetic memories for words have been lost or impaired. Loss of skilled movements involved in *writing* are known as *agraphia*, while loss of power to *read printed or written symbols* is known as *alexia*.

Examination of Aphasics.

As pure sensory or motor aphasia is rare, the physician or the speech specialist must determine the extent of the lesion by finding the type of responses made to some such scheme as that suggested by Beevor*.

1. Whether the patient can *speak* intelligible words. (Speech-motor)
2. Whether he can understand commands which he *hears*. (Auditory)
3. Whether he understands written commands which he *sees*. (Visual)
4. Whether he can *write spontaneously*. (writing center)

*Beevor, C., Diseases of the Nervous System. H. K. Lewis, London, 1898. Pp. 282-283.

5. Whether he can copy from printed to written characters (what he sees and understands.) (Visual and writing centers).
 6. Whether he can write from dictation what he *hears*. (audito-visual-writing).
 7. Whether he can pick out objects and letters of which he *hears* the name. (audito-visual)
 8. Whether he can repeat the names of objects or letters *heard*. (audito-speech).
 9. Whether he can name objects or words *seen*. (Visuo-audio-speech)
- Whether he can read aloud and understand.

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Chapter V

PRIMARY ELEMENTS IN NORMAL TONE PRODUCTION

TONES produced by the human voice are among the most important sounds heard by the human ear, because of their significance in expressing emotions such as pain, fear, anger, love, joy, sorrow and the like. Studies of those areas of the brain which are concerned with the mental processes indicate that there is a close connection both psychologically and physiologically between the receptive areas for sight and sound, and the vocal expressive process.

By means of tone we find it possible to convey complex systems of ideas to others. The quality of tone enables the listener to distinguish between the voices of children and adults and those of men and women. Vocal speech plays an important part in the social intercourse of human beings.

Definitions.

HELMHOLTZ divides sensations of sound into *musical tone* and *noise*. Quality, pitch and intensity of sounds vary with the time. (9) The banging of a door or the rattle of wagon wheels represents noise, while the chords of the piano represent musical tone. The former has the effect of a series of irregular, complex or mixed sensations while the latter seems more uniform, regular, harmonious and agreeable. Noise is called non-periodic motion, while musical tone is called the rapid motion or vibration of a *sonorous*

body. (16) The periodic vibrations of particles of air set in motion, in response to a sonorous body, excite the auditory nerve within the ear of the listener, the excitation is referred to the organ of Corti, and thence to the audito-sensory and audito-psychic areas of the brain where further analysis takes place.

Most musical sounds are composed of the fundamental tone and the partials or overtones which re-enforce it. The four chief characteristics of musical tones are:—

1. Force or volume.
2. Pitch or rate of vibration.
3. Quality, clang, or timbre.
4. Time or rate. (9)

Force or volume increases or is diminished according to the amplitude of the sound wave. This determines *loudness* of tone. Pitch depends upon the number of vibrations within a given period of time. The shorter the vibration, the higher the pitch. The third characteristic, quality, depends on the form of vibration, and this has been found to be closely related to the size and shape of the resonance cavities, above the vocal chords. Time is the length or duration of sound.

Volume of Tone.

DEFINITION: Volume of tone (also called Force in speech) is intensity of sound, dependent upon amplitude of the sound wave, and the length of vibration. The amplitude of the sound wave and the quantity of air set in vibration affect the "loudness" of the tone or the "quantity of sound" (18) and its carrying power.

Helmholtz found that volume or force in upper

partials was dependent upon (1) the nature of the stroke, (2) the place struck, and (3) the density, rigidity and elasticity of the vibrating mechanism. (10) It is important to keep this in mind in studying force or volume in speech. From the standpoint of physics, we find that volume of tone for different pitches is measured by the square of the greatest velocity attained by the vibrating particles. (11)

Loudness: Loudness differs considerably in different individuals, particularly on the higher partials. Helmholtz found that the speaking voice possessed stronger upper partials than the singing voice. (12) It makes considerable practical difference in the carrying power of tone, whether vowels are powerfully begun, for the manner in which tone is initiated, makes a difference in sympathetic vibration and resonance.

"In the attempt to produce a clear energetic tone of voice we also become aware of the tension of a large number of muscles lying in front of the throat, both those which lie between the under jaw and the tongue-bone and help to form the floor of the cavity of the mouth and likewise those which run down near the larynx and air tubes and draw down the tongue-bone." (13)

Breath Control: The control of breath during the emission of tone plays a most important part in tonal volume. It is not always the "loudness" of the voice which carries. It is the power released gradually, under control of the diaphragm and respiratory muscles which expels the air current with sufficient force to resonate adequately and to project tone into space for a desired distance. (8)

Increased control of the respiratory mechanism and openness of tone, rather than shouting, or forced

tones, improves the carrying power of tone and so its volume. With a forced loudness of tone, there often appears a shrill, harsh, strident sound indicative of strained vocal chords and constriction or cramping at some point in the vocal mechanism. (4)

Respiration: Elsewhere we have mentioned (chapter 3) the four types of respiration, which play an important part in speech in addition to their function in life conservation; these are residual air, tidal air, complementary air and supplemental air.

Tidal air may be sufficient for ordinary purposes and for quiet conversation, but it is not adequate for support and carrying power in speech, if the tones are to be projected to any distance beyond the speaker. For speech, trained speakers increase the intake of air by means of complementary breath supply, and then by a somewhat more forcible expiration (of *supplemental* air) the tones may be projected easily and without effort, and even without great increase in loudness.

Breathing in expiration is a passive affair, but in speech it usually consumes more time than inspiration. That is, while the intake of breath consumes somewhere around $1/3$ of the total time, the pause between expiration takes less than $1/3$, and the expiratory act consumes more than $1/3$ of the total time. This is still further accentuated in platform speech as compared with ordinary life breathing.

The change from normal quiet breathing to excessive respiration is associated with the increased activity of a number of muscles, all of the striated variety. These and the spinal nerve may be brought under voluntary control so as to increase the breathing capacity and to improve the volume of tone in speak-

ing. The intercostal muscles and the abdominal wall aid in expelling the air from the lungs, as the diaphragm is released to revert to its dome-shaped position. (14)

Speech defects are frequently accompanied by faulty respiration. Shallow breathing, poor posture, physical debility, and lack of exercise are conducive to poor respiration. The diaphragm may be unresponsive and feebly exercised. There is in stuttering a frequent attempt to speak on an inspiration instead of on the outgoing breath. There are also laryngeal, diaphragmatic and respiratory spasms or cramps during speech, as has been shown by experimental evidence by Scripture and others.

A Speech Hygiene Program.

AMONG the suggestions which are helpful in voice work, we may summarize the following:

1. Nasal and oral hygiene is especially necessary for the speaker.
2. Extending the range of voice upward and downward also aids in increasing force and carrying power.
3. The voice should be ample to the room which it must fill.
4. The speaker should establish his voice at that intensity and pitch, at which he can speak easily and without fatigue.
5. One should begin to speak on the height of the wave of inspiration, gradually releasing as the tone is expelled.
6. The body as an instrument should be "attuned" by means of good posture, relaxation, sufficient muscle tonus, and a vigorous response of the respiratory muscles in inspiration and expiration.
7. Ordinary rules for hygienic living are applicable to the speaker and he should avoid excesses in diet and excessive

use of tobacco and wines. Tight collars are undesirable. The speaker should look to the ventilation of the room in which he speaks. It is best to allow some three hours to elapse after a repast, before speaking in public. When fatigued unduly, it is unwise to strain the voice by speaking at all.

8. Dust and smoke are injurious to the throat and many speakers will not speak before large audiences in the open air. Whatever is injurious to health in general, is also injurious to the voice. On the other hand, hygiene of mouth, nose and throat prolongs life and increases vitality, improves respiration and so increases muscle tonus and the feeling of well-being as a whole.
9. Use judgment in voice training and vocal exercise. Technique and special training seem to produce the best results.
10. Spirometer measurements should be taken occasionally to determine the vital capacity and vital index of the speaker. The intake of air is greater in tall persons than in short. Usually it is somewhat greater in boys than in girls. 500 cc. or around 30 cubic inches is the amount of air ordinarily breathed in, but for speech or song and for physical exertion of various kinds, the intake should be somewhat increased. At least 750 cc. is desirable for support and volume of tone in speech. It may easily be increased to 1500 cc. however, or 3 times the ordinary amount. The wet spirometer is preferable to other types for accuracy.*

Pitch.

DEFINITION: The acuteness or gravity of a sound depends upon the rate of vibration. In speech, pitch variations are chiefly dependent upon the action of the crico-thyroid muscle, which, when contracting, pulls the thyroid cartilage forward and downward. When the tension of the vocal chords is increased the pitch

*A. G. Spaulding Athletic Supply Co., Chicopee, Mass.

rises. With less tension, and slower vibration, lower pitch results. Relative pitch is determined by the position in the musical scale. Absolute pitch is the computation of the number of vibrations per second. There is a standard of vibration frequency by means of which tones may be compared and instruments may be tuned. Concert pitch has been set by the British at about 450 vb. for A¹ and French International pitch gives 435 vb. for A¹ which standard prevails in most musical circles.

We raise or lower the voice to express different shades of emotion and thought. If the vocal chords are tightly drawn, the vibrations are rapid and frequent, with resultant high pitch. If less tense, the tones are lower and slower. Much depends on the mental and emotional state of the speaker. Extremes of emotion may cause entire loss of voice, as in fear or anger. Various authorities differ as to the range of the speaking voice. Scott (20) claims that the average speaking voice is from one octave to an octave and a half. Allport (1) states that the speaking voice is from two to two and a half octaves. Singers often master three octaves. In the period of Italian supremacy in the art of voice culture it was not unusual for a voice to compass five octaves.

Registers: The compass of voice is usually expressed as registers. At least one octave should be easily within the range of any speaker. A person of high-strung nervous temperament often speaks in the upper register, called "head-tones". This corresponds to the high soprano and tenor voices of singers. Other speakers use what corresponds to the falsetto tones, midway between head and chest tones in singing. The chest register is the characteristic and habitual use found

in the masculine voice and in low-pitched, or contralto voices in women.

Pitch Discrimination: Vocal pitch varies with the individual, many speakers using only a few notes in the speaking voice habitually, and seeming to employ not more than half an octave. Monotony is a common fault of voice found more frequently in the untrained than in the trained voice. Seashore suggests the possibility of tonal gaps or islands of deafness which may account for poor auditory imagery and poor pitch discrimination. The median score obtained in the Seashore Musical test for Pitch by a group of Mount Holyoke Freshmen, held for speech correction, was C— as compared with the median of C obtained by an unselected group of students whose voices were sufficiently good as to excuse them from corrective work.

It has been the case for five years, that girls held for speech correction at Mount Holyoke College, who were also poor in pitch discrimination, have had greater difficulty in overcoming their speech difficulty or voice defects than those students with good musical ear and superior pitch discrimination.

Monotones: Monotony dulls the ear of the listener. It fails to stimulate active thought. A voice may be melodious and yet monotonous. Either the speaker is not conscious of the effect of his own voice because of poor pitch discrimination, or he is so intent upon the thought which he wishes to express that he speaks in an absent-minded, far-away, monotonous tone. This is frequent in many class rooms on the part of both student and instructor. There should be a change now and then to hold interest and stimulate thought. If the speaker's ordinary voice is limited in compass, he

should endeavor to correct this fault and to practise such exercises for pitch variation and intonation as may enable him to increase his vocal range. (24)

The singer has his melody curve already plotted, but the speaker must compose, execute and interpret simultaneously. Parepa Rosa possessed a range of three octaves. Farenelli, the pupil of Porpora is said to have sung five octaves easily.*

Range. When the same number of vibrations occur in two vibrating bodies they are said to be of the same pitch. The human ear can hear about 16 vb, but not much lower usually. The low organ notes are of about 16 vb a second. High C on the organ has 4096 vb. per second. Therefore about 16 to 4000 is the range for the human ear. Seven octaves really comprise the range of sounds found in musical instruments. It is said that bats hear sounds made by mosquitoes, when human beings at the same distance cannot distinguish them. The cat is said to hear the high pitched squeak of the mouse, when it is inaudible to the human ear. The range of audible tones for the human ear is from about 12 to 50,000 in some individuals. Between these tones the trained ear can detect some 11,000 different tones. Psychologically, high tones have a lighter or brighter coloring and low tones a darker or duller coloring. (23)

Seashore (22) found no improvement with age in pitch discrimination in children from ten to fifteen. The average for the children tested was practically the same as that for university women.

Individual differences were not due to training, as many who made high scores had received no musical education, while the reverse was sometimes true for

*The Art of Music. Vol. V. Nat'l Soc. of Music, N. Y., 1915.

those who had been so trained. The individual differences, independent of age and sex, were found to be due rather to structural differences in the sense organs.

Seashore also concludes that the organ of Corti reaches its maximum efficiency at the age of about ten, and that it then begins to deteriorate, particularly if not called into systematic activity.

The voice of the child is higher pitched than that of the adult. Male voices are generally lower pitched than women's voices, due to structural differences. Pitch and intonation vary in different languages in expressing the same idea. It is said that American voices are more level in intonation and therefore more monotonous to the foreigner than the voice of the native of Great Britain.

The voice in speech glides from "peak to peak".^{*} It is not usually stationary, and a single syllable may be intoned or inflected, whereas in singing there is usually a note to a syllable or word. The rising intonation usually denotes doubt, or questioning or uncertainty; the falling inflection shows positiveness, affirmation and certainty. The circumflex inflection is suggestive of irony, sarcasm or it may show uncertainty. Upward glides of the voice tend to lighten tones, and downward glides to add weight or certainty. The intonation depends upon the thought and intention of the speaker as well as upon vocal training. (4)

Krapp attributes the higher pitched voice of the American to his intense, nervous and rapid-reacting tendencies. Less range is liable to be found in tense, staccato tones than in relaxed, lower pitched tones.

^{*}According to Bezold, L is the lowest pitched of the consonant sounds and S the highest pitched. O and U are the lowest pitched of the vowel sounds while I is the highest. While L runs as low as 64-125 vb. per sec. S is pitched at 2048 vb. per second or thereabout. (3)

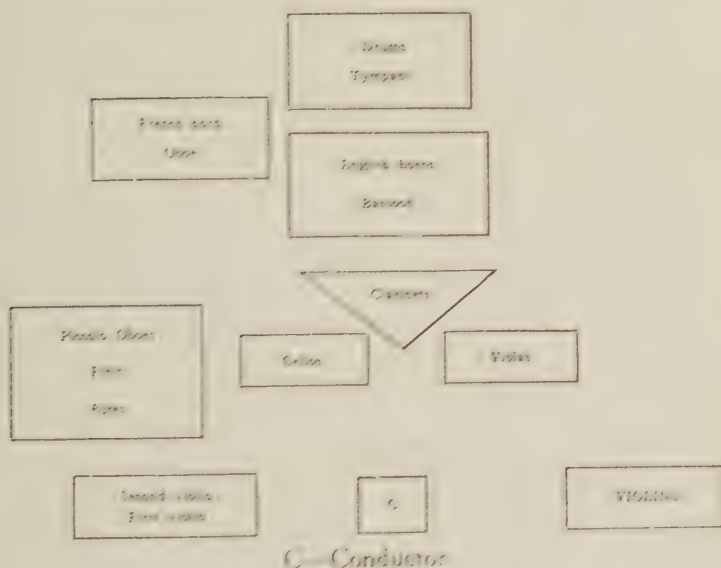
He urges that Americans cultivate the repose of manner and ease of utterance found abroad. The dry climate may have something to do with the American voice, it being lower in damp foggy weather than in dry crisp weather. (15)

Exercises.

1. But wait! What light through yonder window breaks? It is the east and Juliet the sun!
2. Sweet and low, sweet and low, wind of the western sea.
3. Roll on, thou deep and dark blue ocean, roll!
Ten thousand fleets sweep over thee in vain.

Disposition of musical instruments in the orchestra.

(Philharmonic)



4. Awake! awake! ring the alarm bell! Murder and Treason! Banquo and Donaldbain! Malcolm, awake!
5. He jests at scars who never felt a wound.

6. Ah! I am delighted! This is remarkable!
7. Hath a dog money? Is it possible a cur can lend thee three thousand ducats?
9. With everything that pretty is, my lady sweet, arise! Arise! Arise!
10. Pray, you, keep your way! When you are called, return! Now the lord help me. They vex me past patience!
Pray, you, pass on! (Queen Catherine)

Exercises for ear training.

1. Attend a symphony concert and with this diagram see how many of the musical instruments you can pick out from the ensemble.
2. It is useful to train the ear by means of the Educational Phonograph Records used in classes for Musical Appreciation, these being obtainable from the Columbia Phonograph Company.
3. Each individual interested in pitch discrimination should be given the Seashore Musical Tests for Pitch, Musical Memory, Time, and Consonance-Dissonance. Columbia Phonograph Co., N. Y.

Quality.

DEFINITION. Quality, also called tone clang or timbre, is the characteristic of tone which is due to differences in the form of vibrations. According to the physicist, it is determined by the number and relative intensity of the upper partials, which accompany the fundamental. According to the psychologist, it is dependent on the emotional *tonus* or state of the organism. "A good, normal quality is more than anything else the result of proper hygiene, but this should not cause us to overlook the fact that a conscientious effort to improve the vocal quality may be an excellent means of mental hygiene." (17)

Resonation. In speech, the vocal bands give a certain

number of shocks to the air in the resonators and these resonance chambers determine both pitch and quality of tone. Tension of the resonators differs with the physiological and psychic states of the individual. Some writers refer to the "sounding cavities" which reënforce the vibrations of the human voice. Resonance in tonal quality is produced by a vibrating body. The speaker must set the air particles in vibration reënforcing the fundamental note by means of its partials or overtones, which give to the voice its fullness, mellowness, richness and beauty. Without a resonator, the sound from any instrument is weak or feeble. A cultivated speaker dwells on his vowel tones and throws into them all the resonance that they are capable of receiving, if he wishes them to be effective, mellow and pleasing.

Quality depends upon the size, shape, and weight of a given instrument. The size of the larynx and length of vocal cords in the male voice tend to produce tones of greater volume as well as of bass or baritone quality, as compared with the contralto or soprano quality produced by the female larynx.

Beauty of tone appeals to the ear much as beauty of color appeals to the eye. There is practically no such thing as a "pure tone" although the tuning fork comes very near to producing it. Tonal qualities are made up of the fundamental tone plus its overtones.* Quality thus includes both the resonance chambers and the vocal chords. It is the most personal and individual of all the elements of speech. One with a keen ear,

*The fundamental tone is that produced by the vibration of a string as a whole, in any musical instrument, while the partials or overtones are produced by *segments* of the string which vibrate more rapidly than the string as a whole. The string vibrates as a whole, and in segments which bear a fixed, mathematical ratio to the vibration of the whole.

can detect several voices and assign each to its owner, even though he is not within the range of vision. Training may alter or improve voice but it cannot radically alter the fundamental quality of the same. (7)

Voice Reveals Mental Attitudes.

VOICE better than any other medium, may reveal self, not only through the medium of *thoughts expressed*, but through the sympathetic accompaniments found in facial expression, posture, gesture, and other reactions which reveal the attitude of mind of the speaker quite as intimately as do the words spoken. Adults are often trained to conceal, quite as successfully as they are taught to reveal their real thoughts, and so some speakers may use speech as a method of concealment. In general, however, speech quality is a valuable index to personality, revealing the inner man fairly accurately. Qualitative deviations in speech are often an important clinical sign, revealing the emotional state of the speaker and his degree of maladjustment in certain forms of mental deterioration.

In *Dementia Praecox* we have as an important symptom, the rather hoarse, confidential, rather eerie, subdued speech of the individual which reveals the depression, suspicion and nervous tension under which he suffers. The loud, uncontrolled voice and laughter are common to the manic phase of manic depressive insanity. There is the depressed, subdued, sorrowful voice of the depressive phase. The voice of rage, and anger is found in the individual suffering from various forms of delusion and hallucination. There is the speech pressure of the disordered mind in various forms of nervous exhaustion, or febrile infections. We

find also the babbling, irresponsible speech of the imbecile type, which resembles the nonsensical, unrelated and apparently disjointed speech of prattling children. In hysterical reactions, there is the complete loss of voice common to aphonia and certain types of war neurosis.

Choral singing and solo training are undoubtedly a valuable aid to improvement of vocal technique. Speech implies a series of associative reflexes, for the respiratory, the laryngeal and resonating mechanisms are closely related. Since *habit* comes only with practice, it is doubtful if the *best vocal habits* and *best vocal results* come *naturally* to most speakers, without the expenditure of some time and energy to attain good vocal technique. The pupil must form correct vocal habits by training his own ear, by listening to good tone standards, and by perfecting the control of the vocal mechanism by practice and perseverance. The grand opera singer practises only for short periods a day at the outset. The early hours of the day are best. The time spent in practice may differ somewhat with individuals. "Little and often" is the precept followed by most singers. Concentration of attention is necessary in training the speaking voice, quite as much as in the case of the training of the singing voice and the same rules for practice and perfection of technique apply to the speaker as to the singer.

Among qualities of voice listed by various writers perhaps the best known is that of Rush (19) who mentions the Natural, Oral, Orotund, Nasal, Aspirate, Guttural, Pectoral, and Falsetto. These were the foundation for systems of expressions in many schools a generation or so ago. More recent definitions list those qualities which are mentioned in various text-

books on speech or voice, public speaking, singing and the like. They include the following:* with definitions from Webster's.

acute: sharp or shrill.

aspirate: pronounced with breathing: preceded or followed by an h sound.

animated: vigorous, lively, spirited.

brilliant: sparkling, shining, splendid.

bright: animated, clear, conspicuous in shade or tone.

breathy: accompanied by audible emission of breath.

clear: not obscured or dulled by accompanying noises; distinct.

clouded: obscure, confused.

coarse: rough, raucous.

dull: muffled quality, not clear.

discordant: inharmonious, harsh, jarring.

droning: monotonous, dull, low, level intonation.

elastic: springing back, rebounding, recoiling.

flat: unanimated, dull, uninteresting, without spirit or sonority.

flowing: smoothly gliding, not harsh, easily uttered, melodious.

full: having volume or depth, adequate.

grave: not acute or sharp, low, deep.

gloomy: dismal, dim, clouded, melancholy, sombre.

grating: harsh, irritable, having effect of friction.

guttural: produced or thought to be produced in the throat;
velar, back, any palate or throat articulation which seems
harsh or grating.

harsh: offensive to sense, seeming coarse, rough, grating.

hoarse: harsh, grating, discordant, as when chords are inflamed.

hollow: deep, muffled, as though reverberating from a cavity.

husky: dry, without moisture; rough.

jarring: a shaking, discordant, jangling sound.

joyous: glad, merry, gay, joyful.

light: weak, obscurely pronounced; without weight.

loud: intense, striking, impressive, unrestrained, having volume.

*Dorsey-Stinchfield. A preliminary classification of Speech Defect Terminology; Jour. Oralism and Auralism, St. Louis, July, 1926.

- mellow: soft or tender; not coarse, rough or harsh; delicate.
 melodious: agreeable to the ear, musical.
 monotonous: level intonation, without change.
 muffled: deadened as to sound, indistinct.
 metallic: sound of substance striking metal.
 nasal: having nasal resonance.
 orotund: full, clear, strong, musical, bombastic, pompous.
 pure: perfect harmonically, as of a single, simple sound.
 pleasing: agreeable.
 piercing: penetrating, affecting, moving, keen.
 pinched: cramped, squeezed, contracted.
 piping: high, shrill.
 rich: full, mellow, resonant.
 resonant: tingling, adjusted so as to respond to vibrations of a given frequency, reverberating.
 rough: irregular, discordant, grating, harsh to the ear.
 rasping: grating, scraping, irritating.
 raucous: hoarse, harsh, grating, unpleasant.
 sepulchral: unnaturally low and grave or hollow.
 sharp: piercing, shrill, acute.
 shrill: sharp, piercing tone.
 smooth: uttered smoothly, without check, obstruction or hesitation, even fluent.
 soft: pleasing to the ear, flowing.
 sombre: dull, dusky, gloomy.
 sonorous: loud or full, impressive, full, melodious.
 steady: firm, not shaking, well controlled.
 strident: harsh, shrill, grating or creaking.
 subdued: mellow, softened, quiet.
 thick: indistinct, muffled, not clear, dull
 thin: lacking body and volume, faint, weak, shrill, metallic.
 throaty: guttural, hard quality due to contraction in throat.
 toneless: lack of normal balance in relation to pitch and accent, meter, rhythm.
 veiled: slight obscuring of the voice, not clear.
 vigorous: strong, powerful, vital, energetic.

Time.

IN studying the time element in speech, we have to consider three factors: (1) the length of the individual sounds; (2) pauses which occur before or after or between words and word groups; (3) the rate and rhythm of utterance.

Individual sounds. In poetry scansion we are familiar with the difference between long and short syllables. We have accented and unaccented syllables, strong and weak forms according to emphasis, and therefore the time element varies with the meaning, stress, and emphasis.

Divisions. Rush (19) divided syllabic time into three classes, called Immutables, Mutables and Indefinite. Immutables were syllables always short; Mutables were those generally short but capable of being prolonged; and Indefinites were those capable of being prolonged or extended according to the emotional need or interpretation.

The untrained speaker is peculiarly liable to express time values which are essentially different in intention, in much the same way. The trained speaker learns to dwell upon important sounds, to give them accentuated values. Lionel Atwell in *Debureau* (5) is said to have actually drawled certain important sounds, to secure certain effects. Children in some families habitually drawl by imitation, while others speak in rapid, abrupt tones. Others habitually speak in tones of medium length, measured, unemphatic, and neither slow nor fast in time. These values may be found in both prose and poetry. In the following speeches we have examples of slow, measured speech and of rapid, incisive, utterance.

*Examples.**Slow.*

"Most serene Emperor, illustrious princes, I stand before you at the time appointed, beseeching your majesty and your highnesses to hear me, as I hope, with justice and kindness. If in my replies I forget to give you the titles which are due to you, if I offend against the ceremonial of the courts, forgive me, for I have not been brought up in palaces; I am but a poor monk, the child of my cloister."

(*Luther, at the Diet of Worms*)

Rapid.

"Since your majesty and your highnesses demand a simple reply I shall give it; it shall neither be involved nor polished; and it is this; I neither can nor will retract, for I must go against my conscience. Such is my profession of faith; expect nothing else from me. God help me! Amen."

Speech Rhythm and Melody.

ABRUPT, staccato notes in speech are common to many speakers, while an undue prolongation of syllables, particularly of the vowels, is common to the South and to certain parts of New England.

Writing and reading of literature trains one in the distinction of differences in time values, as the reading of both poetry and prose depends for effectiveness and clearness, upon discrimination in time values according to the nature of the selection read.

"Dramatic instinct" is not always a safe guide to interpretation, and the intelligent reader should possess some technical knowledge of time values, phrasing, pauses, melody and rhythm, in speech and song. The stutterer utters his words in rapid, broken rhythm. While his rate *per minute* may average the same as that of a smooth speaker, one finds on analysis that it

attention to the importance of making a logical division of words and phrases, each thought, representing a group unit, to be presented so that each idea in the series may be properly presented and properly recognized. Commas are not always the signal for a pause but they are often overrun by the reader, when they might well serve as a "traffic signal" for a full stop. The untrained reader sometimes *reads in* commas as follows, "Mr. Brown,—will you,—as you go out,—close the door,—please?"

Pausing after certain parts of speech as was taught by certain rhetoricians seems rather absurd to the modern reader. We are more likely to be governed by the rules of speech composition as related to oral interpretation, rather than by rules for writing. Too many pauses make a break in the thought. Take, for instance the speech of a certain politician, which was enunciated in the following jerky, unrhythmic manner: "We know!—that!—this policy is! unwise, because! it is! ineffective! And so we! plead that it! be defeated!"

Pauses, *properly used*, may be quite as important as the speech itself.

Speech should *move rhythmically*, with *melody* and *regularity*. Jerky, halting speech *offends* the listener. Many speakers however fill in pauses with "urs", "ahs", "uhs" and the like. The actual time rate depends upon the speaker and upon the nature of what he has to express. In general, rapid utterance is appropriate to light, jovial, trivial, sprightly, frolicking, violent, angry, explosive and impatient expressions. Slow utterance is usually given to impressive, solemn, patriotic, dignified, weighty, eulogistic, reverent, devoted, or pathetic utterances. A moderate speed is

more appropriate to descriptive, narrative, epic, expository, argumentative, conversational, commonplace, unemotional speech. There are variations within each of these however, according to the purpose and the mood of the speaker.

Speech Rate.

RATE in ordinary conversational speech is about 120 to 150 words per minute. Many lecturers speak as rapidly as 120 words per minute; others, as slowly as 75 words per minute. Radio broadcasters and lecturers recognize the importance of speaking clearly, distinctly, and effectively and therefore they speak more slowly in lecturing than in ordinary conversation. Trained actors, however, often secure the maximum effect without any perceptible retardation in time rate: as their clear-cut distinct utterance enables them to speak at full speed, or at conversational rate, without, in any way, detracting from the effectiveness of their utterance. The comedian, Charlie Chaplin, recently broadcast over the microphone, at an average of 160 to 186 words per minute, in rather rapid-fire conversational style. His speech, however, in effectiveness, was not to be compared with John Barrymore's broadcasting of *Hamlet* which occurred at the same time. Barrymore maintained a speed of about 108 words a minute, during the *Soliloquy of Hamlet*. The rich, melodious, quality of the speaker's voice was given full play and adequate expression in this speech without either undue deliberation and without speed; while Chaplin's speech was of the rapid-fire, "horse-play" type, and the vocal quality was such as might have been expected in low comedy.

The British insist that Americans drawl. This is due no doubt to the level intonation in American speech and to the retention of secondary stress in polysyllables, as well as to naturally slow tempo in some speakers.

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Chapter VI

LANGUAGE DEVELOPMENT AND PHONETIC SYMBOLS

Language Origins.

IN the first chapter, we discussed the possible sources of racial stocks. In studying the origins of primitive languages, we again find an impenetrable mist between us and the ancient people who first developed articulate speech. There are some evidences that roaming Asiatic tribes may have crossed Bering Straits to penetrate the interior of America. The ancient Athabaskan language of the early Indians was found in widely separated regions, where there was no evidence of intercommunication between the tribes which employed the language. One locality was the Alaska to Hudson Bay region; another was in the Pacific coastal region, in Oregon and Northwest California; and still another, in New Mexico and western Texas. (14)

With 23 or 24 letters arranged in every possible variety as many words might be produced as have ever been in use in the world for according to Muller (5) with this as a basis we could form some 25,852,016,-738,884,976,640,000 words. To understand anything about the beginnings of language we must study fossil history, mythology, poetry, and the social customs of various peoples. Take the word *book* for instance. Here we have a very ancient word, perhaps the first inscribed by primitive man on the bark of a tree, as the word *book* comes from the Anglo-Saxon root *boc*, a beech. *Library* and *libel* come from the Latin root

liber, the bark or rind of a tree used for paper. From the Egyptian *papyrus* we have the word *paper* itself. *Tablet* is also the diminutive form for *table*, coming from the Latin *tabula* meaning a *board*.

Pen is from the Latin *penna*, a *feather*.

Diploma or paper folded double, is from the Greek *diploo*, to *fold*.

Thus *diplomacy* and *duplicity* both mean *doubling*.

Before adequate means of preserving language had been developed, undoubtedly language suffered many changes. It was the invention of written symbols which made possible the preservation of the languages and facilitated the rise from barbarism to civilization and culture.

The superstitions of ancient tribes concerning written communication has been mentioned by Sapir and others. A story is told (5) about a missionary who sent a servant with a letter to a friendly missionary presenting him with four loaves of bread. On the way the servant ate one loaf. When the theft was promptly discovered, the servant was greatly mystified. The next time he went on a similar errand he hid the letter under a stone while he ate the bread, in order that he might not be seen eating it. A similar story is told of Livingston in Africa who laughed heartily as he read a certain book. This greatly mystified the natives, and one of them smuggled the book away and ate one of the leaves to see whether it would affect him as it had affected his master!

Language Superstitions.

THE ancient belief in the power of words is represented in the writing of the name of the deity upon

an amulet which was supposed to ward off all evil. Pictured designs were supposed to ward off evil spirits and among the tribes of East Malacca it was supposed that pictured devices would ward off disease. (5) (P. 18)

The realization that knowledge meant power came to the medicine men and priests of primitive peoples at an early period. Signs and symbols were serviceable means of communication among them. Man as a sign maker, with supernatural powers, is depicted in Western Europe in reliefs of the old stone age. Archæological research has now reconstructed for us some of the rude art of primitive man in Northern and Southern Europe. Carvings in Denmark, and limestone drawings in the Maritime Alps show the primitive pictograph and the importance which it held for earlier civilizations.

In the primitive pictograph we have undoubtedly the forerunner of the modern alphabet. The new world is especially rich in ancient symbolic devices which are found from the coasts of Nova Scotia as far west as the Rocky Mountains. These show records of early expeditions, voyages, famine and illness.

Beginnings of Alphabets.

WE know that printed letters or words were used in Italy about 2500 years ago. The Roman capitals were used in Rome in the third century B. C. There are probably four well marked periods in the development of the alphabet. (5) (Chapt. II.)

(1) Mnemonic to aid the memory, to accredit messengers, and to identify the messenger, as by employing the king's signet ring, a wampum belt or similar device,

(2) The pictorial device telling its own story (such as the hunter's life and fortunes.)

(3) Ideographic or representative symbols in which the picture has changed into an abbreviated symbol.

(4) A Phonetic picture or phonogram of a sound which may be either (a) verbal, or (b) syllabic, or (c) alphabetic.

The picture systems found in Central America give no clue to the origin and development of graphic art among primitive peoples; but in Mexican script there are some evidences of the changes from pictorial illustration to phonetic forms. (5)

The Hittite characters found on a block of basalt by Burckhardt in 1812 have not yet been translated, but we know that the block may have existed in the period when there were skillful carvers in ivory, who represented historical events in pictorial form in various Asiatic countries.

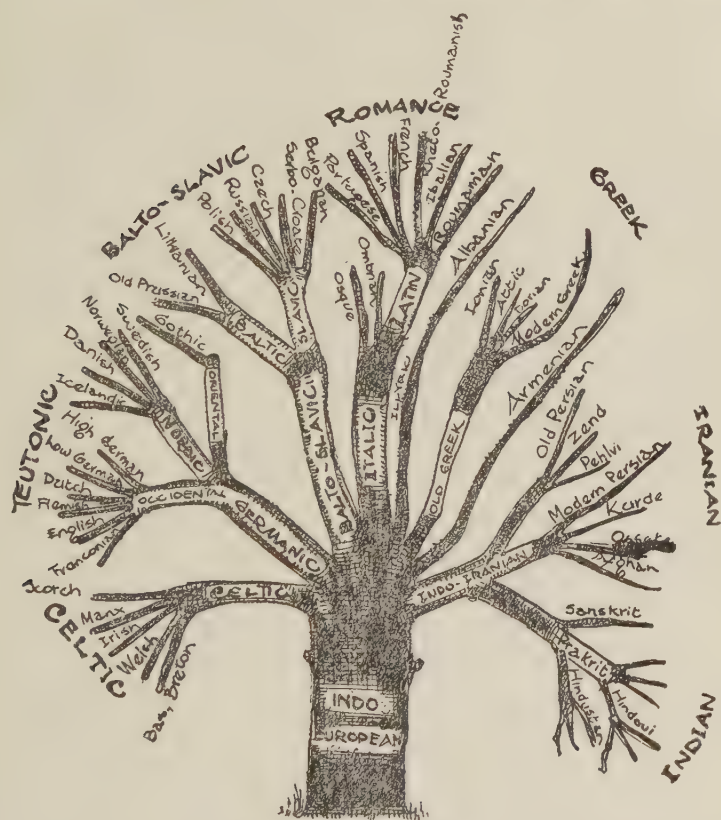
The antiquity of the Phoenician alphabet is evident from the fact that traces of it have been found in Crete, and it is known to date back to the third millennium before Christ. Geometric, rather than hieroglyphic systems were in use all over the Mediterranean as early as 5000 B. C.

Symbols of language found in Egypt possess 13 characters in common with early Arabian, 15 in common with Phoenician, 33 in common with Karian and Kelt-Iberian. There are definite proofs of the use of a hieroglyphic system among the Egyptians and the Hittites in 5000 B. C. The Phoenician alphabet was carried to Greece and its imposition upon the Greeks made possible the wealth of Grecian civilization.

Lambert gives the following table to show the gradual spread of the Phoenician system of symbols.

Growth and Development of Vocabularies.

PRIMITIVE man, contrary to the popular notion, had not merely a few limited expressions but often a great



Family Tree of the Indo-European Languages.

Used by permission of Expression Co., Boston, 1928. Jour. of Expression, Dec., 1907, Pp. 181-190. L. C. Lambert.

number of words to indicate the same object. In the dictionary one can easily find 1000 words each having five different meanings. So long as primitive tongues

were separate, they developed by natural laws, but when two or three tongues came into conflict, there was



LINGUISTIC MAP OF EUROPE.

- | | |
|--|---|
| | I. INDO-EUROPEAN. |
| | <i>Celtic:</i> 1 Bas Breton, 2 Welsh, 3 Irish, 4 Manx, 5 Scotch. |
| | <i>Teutonic:</i> 6 English, 7 Flemish, 8 Dutch, 9 Franconian, 10 Low German, 11 High German, 12 Icelandic, 13 Danish, 14 Norwegian, 15 Swedish. |
| | <i>Balto-Slavic:</i> 16 Old Prussian, 17 Lithuanian, 18 Polish, 19 Russian, 20 Czecho-slovak, 21 Serbo-Croatian, 22 Bulgarian. |
| | <i>Romance:</i> 23 Portuguese, 24 Spanish and Catalan, 25 French and Provencal, 26 Rhéto-Roumanish, 27 Italian, 28 Roumanian. |
| | <i>Illyric:</i> 29 Albanian. |
| | <i>Greek:</i> 30 Modern Greek. |
| | II. URAL-ALTAIC. |
| | 31 Lappish, 32 Finnish, 33 Estonian, 34 Hungarian, 35 Samoyed, 36 Turkish. |
| | III. 37 BASQUE. |

L. C. Lambert. Used by permission of Expression Co. and author.
Boston, Jour. of Expression, Dec., 1927.

bound to be confusion. The modern dictionary cannot keep pace with the rapid growth of language and there are always local idioms, slang phrases, and new words which do not appear in the dictionaries. How many words are used in the ordinary person's vocabulary? There are wide variations in the numbers given. Perhaps certain laborers can express all that appears in the life of an ordinary day, in 500 to 1000 words. An English clergyman reports that this was true of the agricultural residents of his parish. Gypsies in Asia Minor are said to use a vocabulary of not more than 600 words. (12)

Of course we must consider the personality, training, environment, professional demands on the speaker and many other factors in order to realize what linguistic ability may be necessary for each man's particular needs, but even then we find wide individual variations. We have silent Coolidges, and fluent Woodrow Wilsons, in every community. It is commonly said that within certain limits, the more a man knows the less he talks. Yet it is true that greater demands are made upon the professional man, the salesman, the promoter, the capitalist, the actor, and the singer than upon other people in speech and related forms of expression. (11)

Words are adopted by civilization; refined; employed in poetry and literature, philosophy and art, receiving fresh impress from every contact. Hence, language is in a constant state of flux. Among the Greeks and Romans, knowledge of rhetoric and grammar was acquired from speaking and oratory, not from writing. Quintilian and Cicero have given us explicit directions regarding the teaching of language and the acquiring of a vocabulary which are worthy

models for any age. Written symbols however aid in the rapidity of acquiring a new language, as one learns more rapidly by employing both eye and ear. Four or five centuries before Christ the Grecian learning had spread to all parts of the known world. Latin and French have never been so widely employed, it is said. (14) Since the World War, 1914-18 it has been claimed that English is about to enjoy a similar expansion among many additional millions of people.

It is said (8) (Pp. 1-19) that the separation of the colonists from Great Britain was the starting point for the development of a type of English language in America which differs in many respects from the parent tongue. So alarmed were some of the early colonists by frequent changes and corruptions of the language that in 1774 we find an American writer proposing a society of "Fellows of the American Society of Language, for perfecting English Speech in America". John Adams was one of those who in 1780 proposed an academy for "fixing and improving" American English. (Works. Boston, 1851. Vol. VII, P. 249) Noah Webster predicted in 1783 that "America must in some future time be distinguished by the superiority of her literary improvements." (Grammatical Inst. Part I. 1783, P. 14) Also in the writings of Thomas Jefferson (Writings, Ed. Washington, VI. 188) we read that he thought it not improbable that the changes in English in America would in time "separate it in name as well as in power from the mother tongue."

Regarding the influence of English speech upon America, Krapp calls attention to Webster's claim that most of the original settlers came from the vicinity of London and some middle counties, with only a few northern counties represented. The Virginians came

from a rather superior social level, closely connected with Court life, but for some reason did not exert as much influence upon the speech standards in the new country as did the New England colonists. The church and school are represented as the most powerful factors in preserving and developing the language among the colonists. (8)

The increasing speech-consciousness in America, now spreading beyond the opera and the stage is regarded favorably by phoneticians. According to Krapp, exact geographical boundaries are difficult to determine. (9) About all that we can say is that we can distinguish a difference between Eastern, Western and Southern speech. While Jones, Palmer, and others maintain that the speech of England, as spoken in southern England, is standard speech, others claim that American speech is more like that now found in Northern England.

Krapp's findings (8) concerning the characteristic differences between Eastern, Western and Southern speech may be briefly summarized as follows. (P. 37-38)

Eastern Speech

1. No consonant *r* before consonants or finally.
2. Tendency to pronounce *a* before *f, s, th, ns* as *a:* (in arm).
3. Tendency to pronounce *o* as (ɔ:) in *court, port, more* (with *r* lost in pronunciation).
4. Tendency to pronounce *u*

Western Speech

1. Retention of *r* before consonants and finally.
2. *A* pronounced as *æ* (in *at*) before *f, s, th, ns* and as *a:* (arm) only under Eastern influence.
3. *o* pronounced as in *hot, not, lot*.
4. *a* pronounced as (a:) after

- as *u:* in words like *duty*, *w* as in *water*, *watch*, etc.
tune, *mature*.
5. Tendency to pronounce *o* (*ɔ:*) in closed syllable as in *hot*, *drop*, *rock*.
 5. *u* pronounced either as *u:* or as *ju:* in *duty*, *tube*, *new*.
 6. Pronunciation of vowel in *stone*, *home*, *whole*, somewhat shorter than common.
 6. vowels often nasalized.
 7. Final unstressed *a* often pronounced in such a way as to sound like a final *r* in *idea*, *Hannah*, (*idear*, *Hannar*).
 7. hard unmusical quality of voice.

Southern Speech

1. Loss of *r* before consonants and vowels finally. (cf. with New England.)
2. *a* pronounced as *æ* before *f*, *s*, *th*, *ns*.
3. Tendency to pronounce *o* as (*a:*) in *hot*, *got*, *lot*.
4. Tendency to pronounce *u* as *ju:* in *duty*, *tune*, *mature*.
5. Tendency to preserve pronunciation of several words which differ from those commonly found in American speech, as in *garden*, *town*, *mound*, *round*, *tennis* (*tinis*), *haunt* (*hænt*), *many* (*mini*).
6. Consonants after continuants given a lax articulation as in *land*, *first*, *soft*.
7. Cadences characteristic of certain parts of the south as in the words "I *think* so," they might say "I think *so*."

Speech Symbols and Phonetics.

BY means of a system of arbitrary signs, we designate certain sounds of speech. The name of the letter as used in the alphabet is not identical with the sound of that letter when used in a word. A vowel is generally combined with the consonant sound to designate the word,—Thus we say *b* + *ee* for the letter *b*, but in

pronouncing the word *bay*, we do not say *bee* + *ay*. So, also the various consonants have a slightly different value when used in words, from the sounds by means of which they are designated in the alphabet, in whatever language employed. Various languages employ different letters. Certain sounds which are found in English do not occur in other languages. For instance, the *th* sound in *thin*, not found in the Scandinavian tongue, is often sounded as a *t* by the Scandinavian when he begins to speak our language.

The vowels are the fundamental sounds in English and are tones, possessing a certain musical quality as contrasted with consonants, which are noises, made up of obstructive sounds rather than tone.

The sounds in the alphabet therefore do not represent the entire gamut of human expressive sounds. Certain animals are capable of making expressive sounds which closely approximate language, and which resemble true speech, although the speech sounds in such animals are rare, limited in use and within a restricted range. According to recent experimental evidence, it is doubtful whether we can fairly say that man is the only animal capable of employing articulate speech sounds. Yerkes (18) and others have been able to teach chimpanzees and other primates to enunciate certain words, to express certain meanings, and by these means human beings have been able to communicate to a limited degree with the animals in question. The highest of the primates below man is less apt in the speech-learning process than the human infant but whether the differential factor is the quality of brain cell, or some other factors not clearly understood, it is difficult to determine. The young chimpanzee is much slower in the matter of acquiring speech

sounds than the normal human child of one to two years.

Derivation of Symbols.

PLACE-NAMES and individual names have long been employed in communication by primitive man. Myths, rituals, social customs, and organization have been handed down from father to son by means of names, such as those found among the North American Indians. In the historical development of language, Sapir shows that the cumulative-associative method plays an important part in the building up of speech sounds and language. (14) While a culture movement may stop abruptly at a mountain range, or because of other geographical barriers, it may send spurs along various lines of communication which vary in speed of growth according to the local conditions favorable to language assimilation. Primitive tales or legends told for the mere enjoyment of the telling, travel rapidly from clan to clan. Such stories were found in widely separated communities and were an important asset to the development of communication. By intimacy between tribes, by trading communication, marriage, and linguistic kinship, languages were developed from age to age, but if we attempt to find a common origin for the language of man we find ourselves lost in an impenetrable mist which reaches back veritably to the dawn of civilization. The rising speech and gesture may have *been* the dawn of civilization.

Language is defined as "an instrument for reconstructing the past". We know that linguistic changes come about slowly and do not yield readily to changes from without. Such words as *bow*, *arrow*, *spear*, *wheel*, *king*, *plough* and *knight* belong to an ancient past.

King originally meant a derivation of *kin* and comes from the Anglo-Saxon word *cyning*, or one who belongs to the kin-group.

The longer words have been in usage, the more they tend to lose their original descriptive meaning and to become purely conventional symbols of the thing represented. *Spinster* originally meant one who spins, but it has come to mean an unmarried woman of somewhat advanced age. We find the same suffix in such words as *songster*, *huckster*, and the like. (14)

The endings of certain words indicate their antiquity. Take for instance the word, *oxen*; the ending *en* is of ancient origin. The word *kine* was originally used for *cows*, another ancient word. Certain affixes are also indications of antiquity as in the case of words like *reception*, *dependent*.

The chief elements of a word vary from a single syllable to three or more syllables. Words of considerable length may often be analyzed by examining their different elements since the stem and formation of the word may be found.

The greater the degree of linguistic variation within a stock, the greater the period of time which must be assumed for the development of these differences, according to Sapir. (14) 10,000 years is given as a conservative time estimate of the period required for the development of the linguistic differences found in America and in Asia.

The English Vowels.

THE vowels in the English language as listed by the International Phonetic Association (10) (P. VIII) are here given using the symbols for which preference

was expressed at the December 1927 meeting of the National Association of Teachers of Speech, at Cincinnati and recommended by a special vote to the Modern Language Association committee charged with determining the phonetic symbols for American speech as differentiated from strictly English usage. Broad transcriptions were also recommended for words with variant pronunciation.

Although key words cannot accurately express the variations and shades of difference in vowel sounds, we shall employ them here for the use of the teacher and student, since it is the only way in which we can present in printed form the varieties of vowel sounds in our language. Phonographic and radio lectures still more accurately express these differences, as speakers vary locally in regard to the pronunciation of many of the vowels given in any standard work on phonetics. The reader is referred to the Daggett* records and to various lecturers and speakers from the stage who occasionally address a listening group through the microphone. The phonographic record† by H. M., the Prince of Wales, on "Sportsmanship" and the records made by their majesties the King and Queen of England are obtainable and represent cultured English speech as it is spoken in England. Rabbi Wise's speech on Woodrow Wilson is recommended both because of the pleasing resonance of the speaker's voice on the vowel tones, and because it is closer to standard diction than that of the majority of our public speakers on the American lecture platform.

The vowels and consonants listed by the International Phonetic Association are reviewed here, to-

*The Windsor Daggett Records on Spoken English were specially recorded, and may be obtained through the Daggett Studio, N. Y.

†These may be obtained from any dealer in Phonographic Records.

gether with the preferred symbols recommended by the National Association of Teachers of Speech to the Modern Languages Association at their December 1927 meeting at Cincinnati.

Consonant sound.	Phonetic symbol.	Consonant sound.	Phonetic symbol.
p	p	r	r
b	b	hy	hɟ
m	m	ch	tʃ
t	t	j	dʒ
d	d	r (final)	ə (or) ɣ (or) ɹ
n	n		
k	k		
g	g		
ng	ŋ		
f	f		
v	v		
s	s		
z	z		
th (voiced)	ð		
th (voiceless)	θ		
sh	ʃ		
zh	ʒ		
wh	hw (or) ʍ		
w	w		
y	j		
h	h		
l	l (or dark, -l written ɫ)		

Vowel sound	Phonetic symbol.	Key word.
ē	i	eat
ĩ	I	it
ā	e, (or) ei,	mate
ě	ɛ	met
ă	æ	mat

Continued

ī	a, (or) ai,	aisle
ä	a:	palm
ö	-ɑ	soft
aw	ɔ:	saw
ō	o, (or) ou	go
öö	ʊ	foot
oo	u	truth
à	ə	sofa
ŭ	ʌ	cup
ir, er (eastern)	ɜ	her
ir, er (western)	ɝ	ə or ɜ as in her
au, ow,	au	cow
oy	ɔ i	toy
-air, -ere, -are,	ε ə	fair, there, mare.

*The Application of Phonetics to the Teaching of
Foreigners.*

TRAINING the foreigner to prepare him for American citizenship has been called "opening the door of opportunity" for adults. In order to open this door properly, we must furnish the key of understanding, through communication in a common tongue. So important is this matter of communication that short cuts to expression in the form of such languages as Ido and Esperanto have become rather important in conferences between various nations. The problem of

*This vowel was not included in the list of sounds discussed by the National Association of Teachers of Speech. It closely resembles the vowel found in *met* (*e*), however and is listed by some phoneticians and therefore added to this list as it is a sound which causes some difficulty, especially for foreigners because of the various spellings. The pronunciation of these *e* sounds is identical however. (i. e., the *e* in *met* and the *e* in *there*) The *e* in *there* however is followed by a sound closely resembling the indefinite or obscure *e* in American speech. The teacher of speech therefore finds it convenient to write the sound of -ere (as in *there*), phonetically,

language is one of the most important in the entire Americanization program,—a sort of minimum essential to the attainment of maximum efficiency for citizenship.

So long as the immigrants were mostly of English, Scotch or Irish extraction, language was not so much of a problem in this country, but with the influx of people from southern Europe, the Mediterranean regions, Russia, Scandinavia and the Orient, our educators find thrust upon them the duty of preparing these incoming peoples for citizenship, for commercial trading, for assimilation, in order that we may dwell together peaceably and may enjoy a mutual understanding.

Since 1920 this has meant that the Americanization classes have had to train Poles, Italians, Russians, Germans and Scandinavians as well as Orientals, and it is the duty of the teacher in these classes to enable the immigrant to communicate with his fellow citizens, in the English language in as short a time as possible.

The aims set forth by the Massachusetts Extension Division (15) in its course of study for immigrants are as follows:

- (1) To teach pupils to talk freely in simple English about everyday experiences.
- (2) To teach pupils to read and understand simple English on practical subjects.
- (3) To teach pupils to write the simplest facts of identification and personal history from memory; to copy short themes and to write short sentences from dictation.
- (4) To make a beginning in teaching the ideals, the principles and the habits of good American citizenship.

Types of work presented, are, from the standpoint of language:—

- (1) Those including lessons in understanding and in speaking English.
- (2) Lesson in reading English.
- (3) Lessons in writing English.

To this end the University of the State of New York has adopted a list of 4,000 words to be used as a basis for a course of study in English in adult evening classes, from which will be selected in the future the words to be used in the New York State Regents' Literacy Tests for new voters.

Formerly the use of phonetics was confined to departments of ancient or modern languages. For the better understanding and more rapid progress of the individual the sounds were written in symbols which more accurately expressed the vocal sounds than did the letters of the alphabet.

Phonetic transcriptions of various languages have been made and studied extensively in the laboratory of the University of London by Jones. More recently in this country Tilly and Krapp of Columbia University have made valuable contributions to the study of English speech in America. The symbols generally used for such transcriptions are those employed by the International Phonetic Association, based upon the studies of various leading phoneticians abroad. Krapp, however, in his study of English speech in America has found three main divisions, geographically, within which our speech varies (see page 129), namely, North, South and West. He concludes that there will never be a single "standard" such as that proposed by phoneticians in England, but that we shall continue to have local differences in pronunciation in this country for several reasons. First, there is the constant influx of those who speak another language, and who tend

to pronounce in English certain sounds resembling their own tongue. Then we must consider the effect of the former isolation of the pioneers who travelled westwards. Their contacts were largely through books and written communication for some years and this period of semi-isolation may easily have affected the purity of the colonial pronunciation. Again, the Cavalier of the South, while leaving the impress of his speech upon the South, did not to any extent influence the North. There has always been a difference in the speech in the two regions because the original colonists came from different classes of society and tended to perpetuate a different group of sounds.

Standards of Speech.

"STANDARD speech," if we may use that term, is the best speech of the educated and cultured people whether it be North, South, East or West, according to Krapp. It should be sufficiently free from dialectic peculiarities, localisms, harsh, grating, unpleasant provincialisms, nasality and the like so that it shall not grate upon the sensibilities of the cosmopolitan ear. (1)

On the stage we find an increasing tendency to observe the niceties of diction, to improve vocal quality, to acquire the speech of cultivated people and to eliminate small-town or provincial forms which mark a person at once as coming from South Carolina, Northern Michigan, Minnesota, Maine, Texas or New York.

Jones (10) has employed the Phonetic Symbols of the International Phonetic Association to analyze the speech of the natives of Africa, Australia, India, Ja-

pan and Russia. He has made his symbols available to teachers, missionaries and educators in various parts of the world. Teachers of modern languages and teachers of speech more and more find themselves employing phonetic symbols to teach our language to foreigners as well as to teach the modern languages of other countries.

Ours is a difficult tongue, because we have sometimes more than one sound to a letter, and have often several meanings for the same sound. In the grades we learned that the vowels were a, e, i, o, u and sometimes w and y. In the study of phonetics we learn to our astonishment that there are at least twelve different vowel sounds, about 29 consonant sounds,* and some 9 diphthongs in English speech, and that whereas the alphabet lists only 26 letters, we ought to have symbols in the alphabet for about 50 distinct sounds, not including certain diphthongs such as -oor, -ower, -ire, -air, -ear, etc.

We find that in infancy speech understanding precedes ability to speak a language. We can often read a foreign language well and yet may not be able to speak it. In studying any language, we must begin to build up a system of sounds so that they can be identified correctly, used in speech, and also read. This language-building process is a more rapid affair if we use the phonetic symbols to strengthen the association bonds, to show degrees of difference and to help connect names with concrete images and abstract ideas, through training the auditory, visual and motor speech mechanisms.

What are the chief sounds in English which present

*Armstrong. *Lilias, An English Phonetic Reader*. Univ. of London Press. 1923, Pp. x-xi.

difficulties in pronunciation for foreigners? Without reviewing all of the linguistic differences between English and certain other languages, we may still mention a few of the sounds which give special difficulty to a person learning our language. Among foreign students tested at Mount Holyoke college during the years 1922-27, we find students who have spoken Japanese, Chinese, Czecho-Slovakian, French, German, Korean languages, as well as Belgian and Armenian.

Short i. In most of these countries the alphabetic letter *ĭ* (short, as in *bit*) has a long value in languages other than English, so the foreigner is inclined to say *EET EEZ* for *it is*. They say *VEEMEN* for *Women* since *w* is either sounded as *v* or does not occur in some languages. To teach that the short *ĭ* is intermediate in position between *ee* and *ě* (as in *seen* and *sět*) is sometimes a difficult matter, calling for persistent and repeated practise.

O sounds. The *õ* sounds are also troublesome, the *õõ* in *foot* being often given the value found in *bōōt*. Others say *fluud* for *flōōd*. Spelling is not a safe guide to pronunciation of many words in English. Many languages have no *th* sound and so the beginner gives a *t* or *d* sound for the voiceless and voiced *th* sounds as in *think* and *this*.

NG sound. In some languages the *ng* is lacking or else is sounded like *ng* plus *g*, so that one hears *sing-ging*, instead of *singing*. In words like the above it is helpful to the teacher to employ the phonetic symbol for *ng*, which is ʒ, a single indivisible sound and just as much an independent sound as either *n* or *g*. This faulty *ng* pronunciation is especially frequent among Jewish people.

H and W. *H* is lacking in some languages and so

not sounded in English. *W* becomes *v* and in such cases the symbols are useful to indicate the differences in pronunciation in various languages, as *w* is a labial and protruded sound, while *v* is a labio-dental sound with corners of mouth extended rather than protruded.

L and R. *L* and *r* often give difficulty even among our own children. One year at Mount Holyoke we found a Freshman girl with no *l* in her vocabulary, and another without an *r*. Attention had been previously called to some peculiarity in their speech, but no teacher or parent had diagnosed the difficulty sufficiently well so that these students knew how to overcome this slight mispronunciation or letter substitution.

Swedish J sound. *J* occurs in Swedish but it is the same as *y* in *yet* and so the Swede says *yoke* for *joke*. In Czech the vowel follows immediately after the pronunciation of the consonant and so we have *p, t, k*, sometimes sounded more or less like the voiced *b, d, g* to the unaccustomed ear. Voicing of unvoiced sounds carries over into English on many sounds when the language is being acquired.

French. In French, final vowels are very short as compared with English as *mes* for *may*. The *r* is usually trilled. In Spanish, certain vowels are very short and the word *beat* sounds like *bit*, spoken by the Spaniard. *T, d, n* and *l* are formed against the teeth in Spanish, hence they tend to make these sounds too far forward in English. *Wh* is unfamiliar to the Spaniard so he say *w* for *wh* and substitutes an *s* for a *z* sound, saying *price* for *prize*.

Italian. In Italian the vowels and consonants both have a clear-cut distinct enunciation. Except for *n, l*, and *r*, consonants seldom occur at the end of words and so the Italian adds a vowel sound. He may say *grapa-*

fruita for grape-fruit. *Ng* in Italian is always followed by a *g* sound, so he says *ring-g* for *ring*. *Th* does not occur in Italian, and so the Italian says *t* or *d* for *th*.

Japanese. There are only five vowels in Japanese, whereas we have said that there are at least 12 clear cut vowels in English. Lacking the *wh* sound, the Japanese give a *w* sound. Their peculiar jaw structure makes it difficult to close the lips over the teeth on certain sounds such as *f* and *v*. *W* rarely occurs at the beginning of words in their tongue and so they say 'ood for *wood* and find initial *w* very difficult. Short *a* and short *e* as in *mat* and *met* give them difficulty as does short *i*.

Chinese. The Chinese tend to give *ng* final for the final *g*, which does not occur in their language. (1) *Wh*, *v* and *th* are also unfamiliar to the Chinese and hence give difficulty. While it is not necessary for foreign students or others to memorize the phonetic symbols, the teacher must know them well in order to detect shades of difference in pronunciation, to account for local dialects and peculiarities of utterance and to show the student how to overcome these difficulties. The student who knows the symbols can aid in the learning process by detecting his own errors when no critic is present and when his own ear must be his guide. A small hand mirror and a written or printed picture of the symbols, with a clear auditory image of its sounds are valuable aids to accurate pronunciation.

The direct method of language teaching now in vogue trains one by the natural method of language acquisition and is preferable to a mere reading knowledge of any language. Just as there are textbooks in English giving on one page the English print, and opposite the phonetic symbols, to aid the foreigner, so

there are text books in other languages employing the symbols in this way as aids to correct pronunciation. We need more speech exercises of this type for the average student of our language.

Common Errors.

Common mistakes found among those beginning to speak English are such as the following:—

1. German-English speaker
 Tanks, I tink von cop full vill do.
 Thanks, I think one cup full will do.
2. French-English speaker.
 Sanks, I sink zee shielt will bring a bōok.
 Thanks I think the child will bring a bōök.
3. Spanish-English.
 I theenk Meester Wite has hust veeseeted Madreed.
 I think Mr. White has just visited Madrid.
4. Hebrew.
 Vy, iss it dat you like dat sing-ger?
 Why is it, that you like that singer?
5. Norwegian.
 Ve hawp dat Yim vill tink to br-ring hawm sawm
 vine bōōks.
 We hope that Jim will think to bring home some
 fine books.
6. Hungarian.
 Vy did you think you would find fer-r vedder-r
 dere?
 Why did you think you would find fair weather
 there?

SOUND ANALYSIS

Stops or Plosives

STOPS or plosives are formed by closing the lips tightly, (closing off the nasal passage by means of the soft palate) and allowing the air to escape by opening the

lips suddenly, so that there is an explosive escape of air from the tone pasasge. (1)

P, B, M

The chief difference between them is that *P* is a voiceless plosive and *B* a voiced sound, which escapes when the lips are separated and the air suddenly emitted. If the lips remain closed and the soft palate is lowered, cutting off the emission of tone through the oral resonance chamber, it must escape through the nostrils and thus become a nasal tone or *M*.

Practise these sounds by themselves; *P, B, M*, noting their characteristic differences. Combine them with each of the vowels, as: *Pāy, Pēē, Pīē, Pōē, Pōō; Bay, Bie, Boh, Boo; May, Mee, Mie, Moh, Moo.*

Practise in word formation or nonsense syllables as:

page, peel, pile, pole, pool.
bail, beel, bile, bowl, bool.
mail, meal, mile, mole, mool.

T, D, N

THE plosive sound *T* is pronounced by pressing the tip of the tongue against the upper dental ridge, raising the soft palate to block nasal resonance, and allowing the air to escape suddenly through the mouth, as the tongue is released. *D* is formed in the same way, except that it is a voiced sound while *T* is a voiceless sound.

By lowering the soft palate, the air current is directed through the nostrils and prevented from making its exit through the oral cavity, and thus we produce a nasal sound *N*, the tongue remaining in the same position against the upper alveolar ridge, as in *T* and *D*, the tongue position aiding in shaping the resonance chamber of the mouth which aids in giving the

tone its characteristic quality, even though the air actually passes through the nostrils instead of making its escape through the oral resonance chamber.

Practise these sounds by themselves as: *T, D, N*, noting their characteristic differences, as voiceless, voiced or nasal.

Combine them with the vowels as:

take, teek, tile, told, tool.
dale, deal, dile, dole, dool.
nail, neel, nile, knoll, noon.

K, G, NG

K is formed by raising the back of the tongue to meet the soft palate, shutting off the nasal passage, and suddenly lowering or releasing the tongue, thus allowing the air to escape through the oral chamber. This is a voiceless sound, *K*. By voicing the same we have the sound of *G*, also produced within the oral resonance chamber. By holding the tongue to the same position, (versus the soft palate) the air is directed through the nostrils and the sound becomes nasalized or *NG*.

Practise these sounds separately noting their characteristic differences as voiceless, voiced, or nasal, *K, G, NG*.

Note that the *NG* is not an *N* plus a *G* sound as indicated by the letter formation. It is instead a single, indivisible sound quite as much as is either *N* or *G* by itself. It is not even a combination of these sounds. Therefore the phonetician gives it a special symbol of its own to indicate its character, which is **3**.

Combine with vowels as:

cāke, kēēp, kīte, cōld, cōōl.
gate, geet, gile, goal, gool.
ngale, ngeel, ngile, ngold, ngool.

The fricative sounds in English are *f*, *v*, *s*, *z*, the two sounds of *th* (voiced and voiceless) *sh* (as in measure) *wh*, *w*, *y*, *h*, *l* and *r*.*

The *f* sound is formed by pressing the lower lip against the upper teeth, with the soft palate raised to shut off nasal resonance and then releasing the labio-dental pressure suddenly so that the fricative sound *F* escapes. This is a voiceless sound. *V* is formed in the same way, but voiced.

Practise these two sounds, *F*, *V*. Also combine with vowels as:

fāy, fēē, fiē, fōē, fōō.
vay, vee, vie, voh, voo.

S and Z.

S is a sound which gives considerable difficulty as does also *Z*. These hissing and buzzing sounds occur very frequently in our language, and if not well given may resemble a lisp or an oral inaccuracy which is perceptible in the speech of many persons. It is one of the most frequent sounds giving difficulty even among those who have no other "speech defect". Sometimes it should be regarded as merely mispronunciation while at other times it is so noticeably poor as to seem an actual defect of speech.

Ordinarily the *S* is formed by the blade of the tongue (tip and blade) raised so as to come in contact with the hard palate or dental ridge along the sides, but the center of tongue is slightly depressed,

*Barrows and Cordts, (1) call attention to the tendency to regard *w*, *y* and *h* as vowel modifiers rather than as true consonants. *W* and *wh* are also regarded as non-fricatives by some authorities. We give them here under the old classification as a rather arbitrary division for convenience and as so classified by a number of authorities, such as Barrows, Cordts (p. 83) (*Op. Cit.* 1) and Daniel Jones. (p. 51) (*Op. Cit.* 10.)

forming a rill or depression, ever so slightly along the dorsal surface of the tongue. This gives what the Germans call a "rill" sound. The voiceless sound is *S*, the voiced sound *Z*. *S* is the highest pitched of all the consonants, and if not well made is either a disagreeable, sharp hissing sound, or if faintly articulated resembles a *th* sound, and in the latter case experimentation shows that its volume or carrying power is reduced to about 1/7th of the volume found in a normal *s* sound. This, in itself, is an argument for drilling upon clear-cut articulation for the production of *s* and *z* sounds. These sounds must often be very much reduced in making phonographic records and are often softly sung by platform soloists. A poor *s* sound gives an unpleasant effect over the radio and is consequently a sound which frequently needs special drill in articulation among ordinary speakers.

Practise with the vowels as:

sāy, sēē, sīgh, sōn, sōō
zay, zee, zie, zoh, zoo

Th. (ð, θ)

Th (voiced), *Th* (voiceless) as in this and thin.

The voiced sound of *th* is written phonetically ð.

The symbol for the voiceless is θ.

The voiced sound of *th* is formed by placing the somewhat flattened blade of the tongue against the teeth, the soft palate being closed to prevent nasal resonance. In languages such as the Norwegian, where there is no *th* sound it is sometimes necessary to train a foreigner to make the sound by over-correcting, that is by slightly protruding the tongue between the teeth anteriorly and then sharply retracting it, with a voiced sound as in *the*. Practically all Polish children

in the first grade of a school recently tested by the writer, showed the complete absence of *th* sounds, voiced and voiceless, the tendency being to substitute the voiceless *t* and the voiced *d* sounds instead, saying "tin" for *thin*, and "dat" for *that*.

The voiceless sound is made by placing the tongue in the same position as for the voiced sound, but without vocalization.

Practise the sounds *th* (voiced) and *th* (voiceless) observing their characteristic differences. Combine with vowels as:

Thāy, thēē, thȳ, thōūgh, thōō, (voiced)

Thāy, thēē, thȳ, thōūgh, thōō, (voiceless)

Sh and *Zh*.

Sh and *zh* are both indivisible sounds for which we should have a symbol in the alphabet as we do not pronounce two letters here, as the spelling would seem to indicate. The phonetician therefore uses these symbols to indicate these letters.

For *sh* we have the Old English *s*, written *ſ*

For *zh* we have the old symbol for ounce, written *ʒ*.

Sh is made by bringing the tongue into contact with the hard palate and upper teeth laterally, but not so far forward as in *s*, and the central portion is somewhat grooved or hollowed. The teeth are approximated and the soft palate raised to prevent nasal resonance. There is usually a rounding of the lips and some protrusion accompanying the formation of this sound. The same position is taken for the voiced *zh* sound.

Practise these sounds, *sh* and *zh*, separately.

Combine with the vowels as:

Shāy, shēē, shȳ, shōw, shōō.

Zhāy, zhēē, zhȳ, zhōw, zhōō.

Wh and w

STRICTLY speaking *w* and *wh* are semi-vowel sounds and are so classified by some phoneticians.

The sound *w* is formed by rounding and protruding the lips, with a very small opening. The teeth are separated and the soft palate is raised to prevent the presence of nasal resonance. The voiced sound is *w*, and the voiceless sound *wh*, phonetically written as follows: *w* is written *w*, and *wh* is written *hw*, as the *h* is actually breathed before the *w* sound in speech.

Wh is sometimes voiced and sometimes voiceless. Actually phoneticians have found that about half as many people give the voiced *w* sound, as pronounce it with the voiceless *wh* sound, so that either is now generally accepted as correct.

Practise *w* and *wh* with the vowels as follows:

Wāy, wēē, wŷe, wōē, wōō.

Whāy, whēē, whŷ, whōh, whōō.

Y

THE phonetic symbol for *y* is *j*. In forming this sound, the air passage is constricted and the tongue raised in front, so as to nearly touch the hard palate. The position somewhat resembles that for *ee*, which is almost a consonant sound, while *y* is often called a semi-vowel.

Practise the *y* in these words: union, uniform, new, few, due, duty, June, yes, yet, yacht, yard, yarrow.

H and hu (written phonetically *h* and *hj*).

H is called an aspirate sound. The breath escapes through the mouth, the vocal cords being partly approximated as in any whispered sound. The air escaping through the chink of the glottis has the sound of *h*. Practise the words *hāy*, *hee*, *hīh*, *hōw*, and *hōō*.

Hu (phonetically hj).

THIS is a somewhat stronger sound than *h* as in *hat*. With the vowels *hu*, *hue*, or *hew*, the sound of *h* is slightly modified, as the pitch of the vowel is higher than for any of the other vowel sounds used with *h*. Practise *h* as in *huge*, *hue*, *human*, *Hugo*, *Hume* and then in *hat*, *hold*, *height*, *hoot*, *hum*. Alternate first one and then the other and note whether you can hear the difference in pitch of the vowel sounds when *u*, *ue*, or *ew* is used with the *h* sound.

L

IN English speech we find two varieties of *l* sound mentioned by phoneticians, one referred to as the "clear" *l* and the other as the "dark" *l*. Both are formed by pressing the tip of the tongue against the upper dental ridge, anteriorly, so that the central portion of the mouth is closed off by the position of the tongue and yet space is left for the passage of air at either side. The soft palate is also raised to prevent nasal resonance. The clear *l* is written phonetically by the symbol *l*, but many teachers of speech indicate the presence of the dark *l* by a line through it which looks thus, $\text{\text{̈}l}$.

L is a melodious sound used by many poets for euphony.

Practise the sound in such words as *lōw*, *lāy*, *lee*, *lie*, *lōō*. Also in the words: *lĭttle*, *lĭly*, *Lūlū*, *lābel*, *lōon*, *lōock*, *lāte*.

The clear *l* has the resonance of the front vowels and the dark *l* has the resonance of back vowels. The clear *l* is the more acceptable in speech. The dark *l* is found commonly in such words as *knuckle*, *people*, *struggle*, *noble*, *possible*, *angle*, *milk*, *cold*, *ruled*.

R

THE letter *r* is given a consonant sound properly, only when a vowel follows, as in ray, around.

If a word ending in *r* is followed immediately by a word which begins with a vowel, the *r* sound is generally included in pronunciation. We may say "better pies" thus phonetically: *bet ə paiz*, but in saying "better orange," we pronounce the *r* before the vowel thus: *bet ə (r) ɔ rɪndʒ*.

The voiced post-dental rolled consonant *r* sound is heard particularly in Northern England and many foreigners give a strong uvular *r* sound. No consonant *r* should be heard in English pronunciation in final position, or before a consonant: thus cheer, pair, mar, and floor, are pronounced *tʃiə*, *pɛə*, *mɑː*, *flɔː*: (or) *flouə*

In the western and midwestern parts of the United States there is a strong consonant *r* sound given wherever *r* occurs in final position. It is doubtful if this tendency will be overcome or supplanted because of the widespread usage of the final consonant *r* sound, and due to the fact that other languages may have influenced the pronunciation of standard English sounds. For many years, the western world was largely dependent upon the printed, rather than the spoken language of the East for communication, and so tended to depart from the Eastern and English tendency to give final *r* as a semi-vowel sound and gradually the final *r* came to have a strong consonant value, which it still has in Western states.

Practise *r* in the following words. (1) as a consonant sound: *rāy*, *rēēd*, *right*, *rōll*, *rōō*. (2) as a semi-vowel final sound in *pierce*, *scare*, *father*, *brother*, *mar*, *four*, *fur*.

Ch, J

THE sound of *ch* is an indivisible sound in articulation and the phonetician has invented a symbol to express its value, viz: tʃ as in *church*, spelled phonetically tʃə:tʃ

Usually the lips are somewhat protruded, but they may be spread instead, according to Jones (p. 28) (10) This is a voiceless sound and a difficult one to teach the deaf child. It is often illustrated by the sound used in "sneezing", and by this means the child frequently learns to pronounce it by exaggeration and then eventually acquires the correct value for this sound. The voiced equivalent of the *ch* sound is *j*, the symbol for which is dʒ

Pronounce both these sounds separately as *ch* and *j*. Then combine them with the vowels as in:

Chāy, chēē, chȳ, chōh, chōō.

Jāy, jēē, jȳ, jōh, jōō.

Practise Words and Sentences: Vowel Sounds.

1. ē (Printed form): i· (phonetic symbol)

key words: be, see, we, seat, beef, receive (risi·v) meet, thief, police, weak, machine, freedom (fri·dm), deep, meek, piece, fatigue.

Sentence: The scheme, being weak, did not receive much support.

2. ĭ (i) it, bit, dipper, hit, whip, quick, busy, happy, rich, lily, difficult, pity, pretty, women, Ellen, myth, Syracuse, Italy, religion, this is, syrup, affinity, din, city, village, civility, envy, river, fix, ribbon, tiny.

1. It is a pity that he is not happy. 2. There was a din in the city.

3. ě (ε) bread, friend, said, many, extemporaneous, very, Shelley, merry, rent, trench, gentle, cherish, wedge, intend, cleft, pledge, pleasure, measure, treasure, depth,

A wedge-shaped trench extended out from the French lines.

4. *ä* (æ) man, plan, cat, pat, animal, Manchester, thanks, catch, cannon, packet, happy, trap, brand, matches, hand, fan, sand, ladder.

Manchester is a manufacturing city. Catch this packet of matches.

5. *ä* (a:) command, class, glass, grass, demand, pass, path, asks, glance, chance, France, dance, calf, half, Bath, laugh, past, grant, advance, last.

The commander advanced along the pathway. She danced along the dingy days, with ne'er a glance at fate.

6. *ä* (a:) palm, psalm, calm, garment, card, aunt, hard, father, heart, balmy, larch, artist, depart, after.

The guards marched across the yard. Tall palm trees lined part of the roadway.

7. *ö* (ɔ) lost, not, hod, sod, God, quality, horror, was, Sophomore, cotton, top, pomp, Boston, folly, shop, bottle, sorry, song, odd, Wisconsin, on, long, squash, pond, soft.

The frog dwells in the bog. When the torrent burst across the log boom, the forest rang with the roar.

8. *aw* (ɔ:) water, law, saw, all, sort, lord, awe, also, ordinary, waltz, daughter, short, Paul, orchard, hall, shawl, wall, horn.

Lord Shaw's daughter crossed the lawn at his call.

9. *o* (o) obey, Ohio, scholastic, obedient, November, disobey, brocade, flotilla.

The Ohio poet wrote a poem about November.

10. *u* (oo) (u) foot, cook, put, soot, nook, took, pulley, pull, butcher, sugar, bush, cushion, could, pudding, hook.

Put the cushion in that room.

11. *ū* (ōō) (u·) do, rule, stoop, croon, cool, mood, blue, June, doom, lunatic, prudent, pool, noon, shoe, canoe, intrude, rue, tomb, school.

Who goes to school in the afternoon? The crew are on this dock at noon.

12. *ǔ* (ʌ) trouble, dove, bud, butter, mother, tumble, drum, hum, flutter, flood, mud, cup, blushes, humble, crumple.

Then munch on, crunch on, take your luncheon. Our punt won by one length.

13. -ir, -ur, etc. (ə: or ə· in accented syllables) furnace, fern burr, murmur, pearl, work, refer, bird, girdle, journey, earl, girl, earth, Colonel, myrrh, words, nurse, serf.

The earl murmured a few words to the Colonel.

14. (The indefinite, in an unaccented syllable) (symbol, ə again, alike, about, ado, China, father, mother, brother, purser, surprise, support, errand, worker, brilliant, content, venture.

He ventured upon a brilliant enterprise.

15. ā (ei) day, may, chain, great, say, date, strata, gratis, apparatus, play, pay, gay.

Daisy was made queen of the May. Did you say he may come today?

16. -êre, êir, -âir, -âre (ɛə) share, care, prayer, chair, air, snare, fair, mare, hair, heir, dare, lair.

Her fair brow was wrinkled with care. There lay the lion in his lair.

17. ī (ai) white, light, sight, crisis, library, blind, try, high, fly, buy, nigh, ride, side, write, right.

The wise wife tried to hide the knife. The sky was bright in the moonlight.

18. -ew, eu, (ju) youth, view, new, duke, student, dew, Jew, few, beautiful, Union, mute, tune, pew, duty, news, use, pure, review, Tuesday, numerous, suitor.

The Union troops marched to the tune of Yankee Doodle, and in full view of the duke's party.

19. ō (ou, ov) no, blow, old, go, row, stone, road, grow, flow, wrote, broke, woe, rose, cloak, vote.

A rolling stone gathers no moss. Pembroke comes from Bolingbroke.

20. oi, oy (>i) joy, toy, annoy, boy, Roy, employ, coil, toil, noisy, boil, foil, soil, joint, destroy, enjoy.

Roy enjoys his new toy. He is a noisy boy.

21. ow, au (au) now, cow, vow, mount, about, flounder, powder, count, bough, round, gown, crown.

They found the count asleep at the foot of the mountain.

22. -ower (au ə) power, flower, hour, bower, coward, shower, tower.

The Dowager imprisoned Lord Howard in the tower.

23. -îre, -îgher, -uyer (ai ə) fire, hire, higher, buyer, choir, mire, sire, inspire, tire, tyrant, dire, quire.

Inspiring notes from the choir rose higher and higher.

24. -eer, -ear, -ere (i ə) hear, cheer, fear, peer, steer, year, leer, seer, tier, dear.

At the pier the crowd gave many a cheer for the hero.

25. -oor, (u ə) doer, tour, poor, moor, endure, sewer, demure, truer.

They were insured against accident on the tour.

*Speech Agility Exercises**

THE following sentences are not intended for intensive practise, but rather to serve as an index of muscle co-ordination, agility and flexibility of the speech musculature, rapidity of the thought processes, and spontaneity in speech.

I. Bi-labials: P, B, M, W, Wh (hw)

1. Paul, the popular Pope, appointed Potipher to protect the parks.
2. Blundering Brown, the blusterer, bragged about his big brother.
3. The mules have mutilated many maimed militiamen.
4. The wind is west and the waves are wild.
5. The wherry at the wharf was laden with wheat and whale-oil.

II. Labio-dentals: F, V

6. Phillip's friend fought his way toward the ferry.
7. Vivian's vocabulary gives evidence of vitality and vigor.

*The above exercises may be used with caution, occasionally, to indicate the progress of stutterers, in overcoming their handicap. They should NOT be used for training and drill however, as we do not use alliteration of difficult sounds in ordinary speech as often as they occur here.

III. Post-dental plosives, T, D, Ch, J

8. Thomson treated the matter tactfully, tenderly and truthfully.
9. The date recorded did not agree with Dan's desk memorandum.
10. The brook chatters cheerfully as it flows to join the joyous river.
11. Jack and Jill were jumping and jumping.

IV. Lingua-Palatals, L, R, N

12. Look before you leap and let your judgment lead.
13. Round the rough crag ran the ragged urchin.
14. Neither you nor I need fear Ned's noisy ways.

V. Fricative pre-dentals, Th and Dh

15. Through the thin cloth the thorns were thrust. (th)
16. The brothers were gathering heather in stormy weather. (dh)

VI. Fricative post-dentals, S, Z, Sh, Zh, Hy (hu), Y

17. After a stormy session Saul listened to the songs.
18. The sounds of the zither resounded through the prison walls.
19. She saw the ship, a shining shape upon a shimmering sea.
20. With measured tread they bore the treasure to the Pleasure Dome.
21. Hugo knew the heroic traits of humanity.
22. You see yon yellow yacht in yonder bay?

VII. Lingua-velar, K, G, Ng.

23. The Klan kept a keen watch over Caleb Keith.
24. Grumbling ungraciously he gave a gloomy greeting.
25. Rising and leaping, curling and creeping,
Showering and springing, flying and flinging!

VIII. Fricative glottal H.

26. Hark, hark! I hear a humming bird!
- Practise words, with the consonants in initial, middle and final position

Consonant Sound	Phonetic Symbol	Practise words		
1. p	p	pay	ribbon	wrap
2. b	b	bay	ribbon	rub
3. m	m	may	rumble	room
4. t	t	tie	whittle	fit
5. d	d	die	riddle	bud
6. n	n	nigh	under	run
7. k	k	king	wrinkle	stick
8. g	g	gun	baggage	rug
9. ng	ŋ	---	ringing	sing (does
not occur in initial position)				
10. f	f	fee	offer	off
11. v	v	view	over	cove
12. ch	tʃ	child	fetching	pitch
13. j	dʒ	jury	enjoy	judge
14. s	s	say	master	miss
15. z	z	zero	busy	buzz
16. sh	ʃ	show	bushel	rash
17. zh	ʒ	----	azure	rouge (does
not occur in initial position)				
18. th	θ	thin	birthday	month
19. th	ð	this	weather	bathe
20. l	l	light	willing	bill
21. r	r	rat	merit	----
22. h	h	hay	unhand	----
23. hy	hj	hue; Hugo	----	----
24. w	w	war	unwind	----
25. wh	hw	what; where	----	----

Consonants in Practise Words and Sentences.

IN Wyllie's Disorders of Speech (17) the following test sentences are given which are often used in hospitals and institutions where other speech tests are not available. They do not contain all of the consonant sounds in English, however, nor nearly all of the vow-

els, and are therefore incomplete, although they are useful for rapid diagnosis.

1. Peter Brown made white wax.
2. A few fine villages.
3. Thinkest thou so?
4. Behold great Zeus.
5. She leisurely took down nine large red roses.
6. Can Gilbert bring Loch Horn Youths?

Other sentences useful for practise are:

1. Peter was picking peppers.
2. No, no, not now.
3. Billy Barton bought a biscuit.
4. Davy dreamt that he drove a dragon.
5. Gaffer Gray got a goose and a gander at market.
6. The tall timbers cover two lots.
7. Come quickly, the cows are in the corn.
8. Verily, verily, he has saved enough.
1. Patty brought more white wafers.
2. I think this will do.
3. I saw a few fine vines.
4. Does Zeus answer the people thus?
5. She tried to drill nine youths.
6. George can blow the bugler's horn.
7. Ring the liberty bell, please.

Vowels and prefixes.

1. The object is to overtake the runner.
2. She was unable to undergo the ordeal.
3. The exact date is not known.
4. He escaped the unwelcome employment.
5. They robbed him in a blanket which had been warmed at the fireside.
6. The company gave a command to collect the tickets from the corrupt conductor.
7. Iowa prefers to produce much wheat, when she perceives that she can foretell a rapid sale.

8. Before you decide to remove to a new place, select the kind of work you can best do.

Practise sentences containing consonant combinations.

1. He praised the preacher. pr.
2. The braid was brought from Paris. br.
3. The frost ruined the fruit. fr.
4. We thrilled as we heard the notes from the throat of a thrush. thr.
5. In his dream he was at drill. dr.
6. The deer crashed through the creek. kr.
7. The dog growled his greeting. gr.
8. With spike and spade he speeded along. sp.
9. The smoke made my eyes smart. sm.
10. They stopped, being stunned. st.
11. The snail has a snug little house. sn.
12. With skill he guided the skiff. sk.
13. Swiftly gathered the swarm. sw.
14. The squire heard the pig squeal. skw.
15. The husky farm lad came. sk.
16. As the ice split he went in with a splash. spl.
17. The shrewd man never once shrank from the task. shr.
18. The scribe opened the scroll. skr.

Articulation Test

BELOW are given 34 sentences, each containing three sounds to be checked or credited, with the exception of the last sentence which contains only one sound to be checked. The score is 100: or 33 times 3 plus 1 (for the final sentence). Total 100 points.

Score yourself or ask an observer to check you, using the accompanying check sheet for the purpose. The sentences here given contain all the sounds of English as listed in the International Phonetic Association alphabet, with a few additional consonant com-

binations, making a total of 100 possible points. See footnote for information regarding additional testing material.*

Articulation Test A

	Test Sounds
1. He could not adhere to the whig plan.	h, h, wh
2. He fell, baffled off the cliff.	f, f, f
3. You have a good view of the river, from the cove.	v, v, v
4. Can you bring the basket at eight o'clock?	k, k, k
5. The girl was dragging a heavy bag of potatoes.	g, g, g
6. The monk was ringing the gong.	nk, ng, ng
7. Pick the apples when they are ripe.	p, p, p
8. He brought the rubber ball for Rob.	b, b, b
9. The mob heard the rumbling of the drum.	m, m, m
10. Try to bail the water out of the boat.	t, t, t
11. I did not wonder at the deed.	d, d, d
12. He brought us some nuts and a candy cane.	n, n, n
13. The child was scratching a match on the chair.	ch, ch, ch
14. Jack put the toy engine on the bridge.	j, j, j
15. She was washing that dish.	sh, sh, sh
16. The tape measure is brown and gilt.	br, zh, lt

*Used by courtesy of C. H. Stoelting & Co., Chicago, Ill., publishers of Blanton-Stinchfield Speech Measurements, Graded Series, Grades I-VIII, and Adult Tests.

- | | |
|--|------------------------------|
| 17. I saw the basket of lace. | s, s, s |
| 18. Zero is called the freezing point. | z, z, z |
| 19. Walter was away last Christmas. | w, w, kr |
| 20. Have you read the news about the flight? | y, ew, fl |
| 21. This is the leather with the smooth finish. | th, th, th |
| 22. I think the author's name is Smith. | th, th, th |
| 23. The ladder was taken from building to the wall. | l, l, l |
| 24. Right near the tree it stands. | r, (t)r, -ear |
| 25. Over there is a flower. | ou, -ere, ow |
| 26. He could see that the apple was bitten. | ee, ă, ĭ |
| 27. He came and brought the wire for our radio. | ă, ire, our |
| 28. The bird hovered over the water. | ə: (ir), ə (hover)
(ɔ) aw |
| 29. The poor child was looking for a star in the book. | -oor, a:, öö |
| 30. The boy did not come soon enough. | oi, ö, ȳ |
| 31. I can see the squirrel, scrambling and scolding. | skw, skr, sk |
| 32. The fly alighted near the cup. | ī, -ear, ū |
| 33. Hugo met with a troublesome fate. | hy, ě, tr |
| 34. Give me the glasses, please. | gl |

SUPPLEMENT TO INTERSTATE BULLETIN— ADULT EDUCATION

New York State Regents Word List

Below are given the first thousand words of the New York State Regents Test of 4,000 words selected by Mr. A. E. Rejall, for a *reading* vocabulary and used as a basis for the New York State Regents Literary Test.

The words starred are intended for a *spelling list*, and for that purpose have been selected from the Buckingham Extension of the Ayres Spelling Scale, from a Basic Writing Vocabulary by Dr. Horn and from the Teachers' Word Book by Dr. Thorndike. In its present form the list has been taken from Bulletin No. 865, published by the University of the State of New York.

a	*American	back	*bill
*able	*among	*bad	*bird
*about	*amount	bag	*birth
*above	*an	baker	bitter
*absent	*and	ball	*black
*accident	angry	banana	*blackboard
*across	*animal	*band	*blow
*act	*another	*bank	*blue
*add	*answer	barber	*board
*address	*any	basket	*boat
admit	anything	bath	*body
advertisement	apple	bathe	*boil
afraid	apply	*be	*book
*after	appoint	*bean	booth
*afternoon	appointment	*bear	*born
*again	*April	beard	boss
against	*are	beautiful	*both
age	*arm	*because	bottle
*ago	army	*bed	bottom
*air	*around	been	*box
*alike	*arrive	*before	*boy
*all	as	*begin	brave
allow	*ask	*behind	*bread
*almost	*asleep	being	*break
*alone	*at	*believe	breakfast
*along	attention	*bell	bright
alphabet	*August	*belong	*bring
*already	*aunt	*below	broom
*also	*automobile	beside	*brother
although	autumn	*best	brown
*always	*avenue	*better	brush
*am	*away	*between	*build
*America	*baby	*big	*building

*Used by permission of A. E. Rejall, Dept. of Education, Albany, N. Y.

*burn	cigar	*crowd	*dry
business	cigarette	cry	*during
*busy	*citizen	cup	duty
*but	*city	cure	*each
butcher	*class	customer	*ear
*butter	*clean	*cut	*early
button	*clear	dance	*earn
*buy	*clerk	*danger	earth
by	*clock	*dark	*east
cake	*close	*date	*Easter
*call	*clothes	*daughter	*easy
*can	cloud	*day	*eat
candle	*coal	dead	*education
*candy	*coat	*dear	*egg
cap	*coffee	*death	*eight
*car	coin	*December	*eighteen
*care	*cold	decide	eighteenth
careful	collar	Decoration Day	eighth
careless	collect	*deep	*eighty
carpet	*color	dentist	*either
*carry	*comb	*deposit	*elect
cat	*come	*desk	*eleven
*catch	*company	*die	eleventh
*cause	conductor	*different	*employ
*cent	*cook	*dime	empty
certain	*cool	*dinner	*end
chain	*copy	*dirt	*English
*chair	corn	*dish	*enough
chalk	corner	distance	*enter
chance	correct	*divide	entire
*change	*cost	*do	entrance
*charge	*cotton	*doctor	*equal
cheap	*could	*dog	*even
*check	count	*dollar	*evening
cheek	cough	*door	*ever
*cheese	*country	*down	*every
chicken	*court	*dozen	*everything
chief	cousin	draw	examine
*child	*cow	*dress	*except
choose	cracker	*drink	*exercise
Christmas	cream	*drive	exit
*church	*cross	*drop	*expect

*Used by permission of A. E. Rejall, Dept. of Education, Albany, N. Y.

*eye	*foot	green	*how
*face	*for	grocer	*hundred
*fact	forehead	*grocery	*hungry
factory	*foreign	*ground	*hurt
*fair	foreigner	*grow	*husband
*fall	*forget	guess	*I
*family	fork	*had	*ice
*far	form	*hair	*if
fare	*forty	*half	*in
farm	forward	hall	inch
*farmer	*four	hammer	*ink
farther	fourteen	*hand	*interest
*fast	fourteenth	handkerchief	*into
*fat	*fourth	*happen	iron
*father	Fourth of July	*happy	*is
fear	*free	*hard	*it
*February	fresh	*has	*its
feed	*Friday	*hat	*January
*feel	*friend	*have	*job
*few	*from	*he	join
*field	*front	*head	*July
*fifteen	fruit	*hear	*June
fifteenth	*full	*heart	*just
fifth	gallon	*heavy	*keep
*fifty	*game	*help	*key
*fight	*garden	*her	*kill
*fill	*get	*here	*kind
*find	*girl	hide	kindergarten
*fine	*give	*high	*king
finger	*glad	hill	kitchen
finish	*glass	*him	knee
*fire	glove	*his	knife
*first	*go	hit	*knock
*fish	*God	*hold	*know
*five	*gold	*holiday	labor
*flag	*good	*home	laborer
floor	*good-by	*hope	*lady
*flour	*government	*horse	*lake
*flower	grape	hospital	*land
fly	*grass	*hot	landlord
*follow	gray	*hour	language
*food	*great	*house	*large

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*last	*matter	needle	*only
*late	may (M)	neither	*open
*laugh	*me	*nephew	*or
*law	*meal	*never	*orange
*lay	*mean	*new	*order
*lead	measure	*newspaper	*other
*learn	*meat	New Year's Day	*ought
*least	medicine	*New York	*ounce
*leave	*meet	*next	*our
*left	member	*nice	*out
*leg	*middle	*nickel	*over
length	*might	*niece	overalls
*less	*mile	*night	overcoat
*lesson	*milk	*nine	*own
*let	million	*nineteen	owner
*letter	*mind	nineteenth	*page
*lie	*mine	*ninety	pail
*life	*minute	ninth	pain
*light	*miss (M)	*no	*paper
*like	mistake	noise	*park
*line	*Monday	*none	*part
lip	*money	*noon	*pass
*listen	*month	*nor	past
*little	moon	*north	*pay
*live	*more	nose	peace
loaf	*morning	*not	peach
*long	*most	*nothing	pear
*look	*mother	notice	*pen
*lose	*mountain	*November	*pencil
loud	mouth	*now	penny
*love	*move	*number	*people
*low	*much	*ocean	perfect
*mail	multiple	o'clock	*perhaps
make	*music	*October	*period
*man	*must	*of	*person
*many	mustache	*off	*picture
*map	*my	*offer	pie
*March	*nail	*often	*piece
*mark	*name	*old	pillow
market	*near	*on	*pin
*marry	neck	*once	*pint
match	*need	*one	pipe

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*place	remain	*seem	*sit
*plain	*remember	*self	*six
*plant	*rent	*sell	*sixteen
plate	reply	*send	sixteenth
*play	*report	sentence	sixth
*please	*rest	*September	*sixty
plus	restaurant	serve	*size
*pocket	ribbon	service	skin
*point	*rich	*set	skirt
*policeman	*ride	*seven	*sky
*poor	*right	*seventeen	*sleep
possible	*ring	seventeenth	sleeve
*postman	ripe	seventh	*slow
*post office	*river	*seventy	*small
potato	*road	*several	*smell
*pound	rock	*sew	*smoke
*power	roll	*shake	*snow
prescription	roof	*shall	*so
*president	*room	sharp	*soap
*pretty	*round	*shave	*soft
*price	*rule	*she	soldier
principal	*run	sheet	*some
promise	sad	shine	*something
*public	*safe	*ship	*sometime
*pure	safety	shirt	*son
*put	sail	*shoe	*song
*quart	*sale	*shop	*soon
*quarter	*salt	*short	*sorry
*question	*same	*should	sound
*quick	sandwich	shoulder	soup
*quiet	Santa Claus	*show	sour
*rain	*Saturday	*shut	*south
raise	*save	*sick	*speak
razor	*savings	*side	*spell
*reach	*say	sight	*spend
*read	*school	*sign	spoon
*ready	scissors	silk	*spring
reason	*sea	silver	stair
*receipt	season	*since	*stamp
*receive	*seat	sing	*stand
receiver	*second	*sir	*star
*red	*see	*sister	*start

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*state	tenant	*to-night	*vote
*stay	*tenth	*too	*wage
*step	*than	tooth	wagon
*still	*thank	*top	waist
stockings	*Thanksgiving	*touch	*wait
*stone	*that	toward	*wake
*stop	*the	*town	*walk
*store	*theater	*track	wall
*storm	*their	*train	*want
*story	*them	*travel	*war
stove	*then	*tree	*warm
*street	*there	*trip	warning
*strike	*these	trouble	*was
*strong	*they	trousers	*wash
student	*thin	*true	*Washington
*study	*thing	*try	*watch
subtract	*think	*Tuesday	*water
*such	*third	*turn	*way
suffer	*thirteen	twelfth	*we
*sugar	thirteenth	*twelve	*wear
*suit	*thirty	twentieth	*weather
sum	*this	*twenty	*Wednesday
*summer	*those	*twice	*week
*sun	*though	*two	weigh
*Sunday	*thousand	umbrella	welcome
*supper	thread	*uncle	*well
*sure	*three	*under	*were
sweep	throat	*understand	*west
*sweet	*through	*United States	wet
*table	throw	*until	*what
tailor	*Thursday	*up	*when
*take	*ticket	*upon	*where
*talk	tie	*us	whether
tall	tight	*use	*which
taste	*till	*usual	*while
*tea	*time	vegetable	*white
*teach	*tire	*very	*who
*teacher	*to	vest	*whole
telegram	*to-day	*village	*whom
*telephone	*together	*visit	*whose
*tell	*to-morrow	visitor	*why
*ten	tongue	*voice	wide

*Used by permission of A. E. Rejall, Dept. of Education, Albany, N. Y.

*wife	*with	*world	yellow
*will	*without	*worth	*yes
win	*woman	*would	*yesterday
*wind	*wonder	*write	*yet
*window	wood	*wrong	*you
*winter	*word	*yard	*young
*wish	*work	*year	*your

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Chapter VII

INSTINCT, EMOTION, FEELING AND SPEECH

INSTINCT, emotion and feeling, which play so important a part in communication by means of language and gesture, have been very differently treated by various writers who have analyzed the forms of human behavior from a psychological and physiological standpoint.

Emotions are more easily identified than are instincts in the human being, because in many cases instincts are so early overlaid with habit or acquired pattern reactions that habit and instinct are distinguished with difficulty. Ordinarily we think of habit as acquired during the lifetime of the individual while instincts occur without previous education in the performance and without foresight of the end in view.
(20)

Instinct.

INSTINCT is defined as a hereditary pattern reaction, or a series of congenital responses unfolding serially under appropriate stimulation. (42) Some appear at birth; others appear later, at the appropriate stage of physiological development. Those reactions which are reflex or automatic, in the physiological sense, are not properly called instincts and yet in the human being the pure reflex is rare, as many of the reflexes are early subject to inhibition or reënforcement, due to the activity of the super-motor areas of the brain. We have seen (Chaps. 3 and 4) that there is a func-

tional relationship between motility and intelligence. Man's power of communicating ideas and impulses to others by means of speech, language and gesture is of vital importance in making adjustments and the psychologist holds that man has advanced from simple adjustments on an instinctive basis to adjustments of a more complex type, on a rational basis, and that this has come about through man's ascendancy in the matter of habit formation. This process has been called by Bernard a "stairway" of habits, viz;— (4)

Stage I. Instinct.

Stage II. Overt habit.

Stage III. Overt and internal habit.

Stage IV. Internal habit (neural).

Stage V. Vocal language.

Stage VI. Written language (potential habit).

Of the arbitrary classifications of instinct Watson's is perhaps the most useful for application to expressive activities;—(43)

Watson's Classification of Instincts.

1. Structural characteristics, action systems, etc., such as bodily characteristics by means of which species are determined; locomotion, creeping, crawling, etc.
2. Obtaining food.
3. Shelter. (trees, logs, caves, etc.).
4. Rest, sleep, play (Day-night activities; length of rest; habits).
5. Sex-behavior. (mating, nesting, care of young).
6. Defense and attack. (methods of same).
7. Special forms of instinct. (migration; mimicry).
8. Vocalization. (cries, calls, sounds uttered).
9. Unclassified and non-adaptive, random and abortive behavior,

10. Unclassified and non-adaptive but complex acts (dancing, strutting).
11. Individual peculiarities in response (attack on a problem; individual performance).

McDougall holds that each of the primary instinctive tendencies is coupled with its appropriate emotion and lists seven specific tendencies which he holds to be fundamental in character development. They are (25)

<i>Instinct.</i>	<i>Emotion.</i>
Flight	Fear
Repulsion	Disgust
Curiosity	Wonder
Pugnacity	Anger
Self-abasement (subjection)	Subjection (negative self-feeling)
Self-assertion (self-display)	Elation (positive self-feeling)
Parental instinct	The tender emotions (love, parental, filial, etc.).

Less easily classified on the basis of emotional components are gregariousness, acquisition, imitation, suggestion, sympathy and play. These are called the primary emotions. Other emotional states which represent a blending of various of the above and in different degrees are more complex reactions and usually are referred to as the secondary emotions. Such for instance is the blending of fear and curiosity, and of attraction and repulsion.

Emotion.

EMOTIONS and instincts are more variable and less predictable in man than in the animals, because of man's greater modifiability, adaptive behavior and intelligence. Emotion has been defined as a "stirred-up state of the organism" (45) and it may be sublimated

or inhibited so as to be expressed in various ways, in the individual according to the circumstances, and according to the condition of the organism at the time. The savage may at times be charmed and rendered gentle by means of music; in civilized man pugnacity may find an outlet in political activities; gregariousness may be expressed in social dancing, in language, or in writing.

Expression of the Emotions.

THE manifestations of emotion are many and may be aroused by perception and ideas, by a physical condition such as ill health, or by the buoyancy of a state of well-being, so that its expression differs in the same individual at different times. The James-Lange theory of emotion holds that bodily changes follow directly upon the perception of the exciting fact, and that emotion, the feeling accompanying these changes as they occur, might be considered in two ways (1) all that is objectively expressed by movements of the face, body, vasomotor, respiratory and circulatory disturbances, and (2) "subjectively by correlative states of consciousness classed by external observation according to their qualities." Ribot believes that the psychical and the physiological states cannot be studied independently of each other. (21) Stanley Hall refers to anger as the most dynamogenic of all emotional states.

The expression of emotion is diffused over various motor tracts and may be aroused as a result of mechanical stimulation or as a result of psychological stimulation. It is chiefly aroused by sight, hearing, smell or touch. Speech itself, involving sensory and motor areas of the brain, laryngeal and respiratory

mechanisms, is often a clear index of the emotional state. Bodily accompaniments such as elevation of the torso in elation; opening the eyes in wonder; relaxation of the limbs in prostration; alert, watchful attitude of defense are all bodily signs of the emotional state. Emotion is thus expressed through changes in the physiological condition of the body, and is apparent in general muscle tension or relaxation, and in the muscles of eye, face, head, and neck particularly.

Two schools of actors, in emotional expression, have been mentioned by various writers (1) those who testified that they acted with their "heads" (without feeling the emotion portrayed, particularly), and (2) those who acted with their "hearts," and who felt that an attitude assumed would bring the appropriate emotional expression.

Music is called the most emotional of all the arts, with drama ranking next. This is explained on the basis of the musical rhythms which increase the vibrations of the nervous system, giving sensory pleasure through the blended, harmonious musical cadences produced. Greek physicians long ago recognized the therapeutic value of music in treatment of the insane. *Trader Horn* speaks of the effect of the harp and of the music box upon the savages dwelling along African river banks. (24)

In speech any theme becomes emotional in proportion to the relation which it seems to bear to the welfare of the individual or his group. Cannon (6) has shown the effect of the emotions of Fear, Anger, Rage and Pain upon the ductless glands. He finds that anger causes the release of adrenaline from the adrenal glands, which in turn causes the release of sugar stored in the liver, and so increases the sugar in the

blood, providing thus for the emergency occasioned by the emotional state of anger or rage.

Bell has shown that the expressions, attitudes and movements of the human figure are characters of language, which convey the effect of historical narration and show the working of human emotions. He also says that they give the most striking and lively indications of intellectual power and energy.

Feeling.

EMOTIONAL states are closely related to what the psychologist calls "feeling tone" or sentiment. Feeling is primarily made up of the mental state of pleasantness or unpleasantness and is aroused chiefly by objective stimuli, while emotion may be generated merely by the perception of an idea or of a fact. The state of feeling indicates the impression made upon the organism by the stimulus, and whether it is adapted to its needs and capacities. Thus "unpleasant" means that it is poorly adapted.

An interesting arrangement is the tridimensional classification of the feelings by Wundt:—(47)

1. Tension and its opposite relief.
2. Excitement and its opposite quiescence.
3. Pleasantness and unpleasantness.

Combinations of these may be experienced at the same moment, so that an individual might feel excited, tense and pleasant at one moment and again might be in a relaxed, quiet, unpleasant state of depression.

Instinct, emotion and elementary feelings of pleasantness and unpleasantness play perhaps as important a part in life reactions and adjustments as do reason and judgment. Many of our reactions are primarily

made on an emotional rather than on a reasoning basis. A world of unemotional men and women would be as uninteresting after a time, as the Robots in the play, "R. U. R." Man's very inconsistencies, vagaries, changes of mood and emotion render him more complex, less easily fathomed, and hence more of a mystery.

In studying the expression of the emotions in man we must distinguish of course between permanent facial features, and expression through mobility of the countenance. Bell calls attention to those structural forms of feature which prejudice our estimate of character in certain individuals. Protuberant jaws for instance seem to indicate a somewhat brutal character or aggressiveness; projection of incisor teeth seems to give an appearance of meanness, savagery and ferocity, as in the demons of Michael Angelo's "Last Judgment."

The perfection of the human head in European races as compared with that of the negro, is found by Bell to consist chiefly in the increase of the cranium forward, and in the full and capacious forehead. The smaller cranial capacity of the negro, and the larger jaws give his face an appearance of greater size.

The Greeks were accustomed to deify man by accentuating those lines which added to the noble appearance of the human head, and to the loftiness of expression and dignity. The increased height of the forehead and breadth of the cranium or skull is an example of this attempt to adequately portray god-like expressions of the finer emotions. They combined the excellences of many models and did not portray any particular model; in imagination they first idealized and then hewed in the stone those excellences which they believed to be god-like. (5)

Theatrical arts assume that the human countenance,

under the influence of the emotions, portrays in feature and facial expression the state of mind and feelings of the actor. While the expression of the emotions varies greatly with different individuals and with the same individual under varying circumstances, there are certain stock-patterns of portrayal known to the actor and frequently used.

Excellence of make-up assists greatly in the suggestion of certain characteristics, and natural lines are accentuated or desired characters suggested in the facial make-up so that certain types stand out independent of speech and gesture and suggest to the audience certain characteristics which the author wishes to present.

The gamut of emotional expression in the human infant is quite restricted as compared with that of the adult. The new born babe has only a relatively small vocabulary of emotional expression such as cries of fear, anger, rage, expressions of comfort and cries indicative of bodily discomfort. Many animals use calls which express love, rage, fear, helplessness and which seem to be the forerunners of articulate speech in man. Handicapped children and those continually thwarted tend to develop "warped" or unpleasant personalities which are apparent in the emotional expression and in adaptiveness to social situations. Deaf children are notably deficient in emotional control; crippled and blind children are often subject to temper tantrums. They may be misunderstood, wrongly dealt with, and a permanent set given to a personality which might normally have developed socially adjustive, pleasant qualities.

Accompaniments of Emotion.

IN general it may be stated that any strong state of emotion, sufficient to produce a rapid heart beat, increased blood-pressure, disturbances of respiration and vasomotor disturbances tends to express itself in outward, visible expressive signs. Internal states of emotion and feeling are much more subject to control in some individuals than in others. One actor actually experiences the emotion he portrays, while another personates, represents, or assumes it without experiencing the emotion itself.

Among the various forms of emotional expression, those which are most common in the literature of expression and best described by Bell (5) and by Darwin (10) are anger, grief, terror, fear, love, dislike, hatred, meditation, joy, sorrow, and pain.

In laughter, play, and happy emotional states the individual expends much of his energy in a socially desirable manner, and speech develops in response to the social need. It is important that children should feel this urge to talk and be given opportunity for its exercise, if they are expected to function in society as socially adaptive individuals, able to make themselves understood, and to enjoy the give and take of normal social intercourse. A nervous, unstable childhood often lays the foundation for high-strung, unrestrained nervous reactions and lack of emotional control in adult life. This is often manifested in temper tantrums, crying spells, swearing, unsocial attitudes and maladjustment generally.

Anatomical Accompaniments of Emotional States.

ACCORDING to the anatomist, certain muscles of the face which serve other purposes also, are called the

muscles of expression. We have the set of "snarling muscles" which raise the lips from the teeth. There are also the muscles surrounding the eyelid, exposing by contraction the whites of the eyes. The muscles of the nostrils are more expressive in animals than in man. Most important are those which elevate and those which depress the nostrils. A less important group expands the nostrils.

The muscles which control the inner portion of the eyebrows and the angle of the mouth are mobile and important in facial expression.

One of the most important of the facial muscles is the *Corrugator Supercilii* of the frontal bone, which inserts into the eyebrow, enabling the eyebrows to be knit to express perplexity, fear, terror, meditation, deep thought, energy of mind, or when relaxed to express calm, placid, unemotional mental states.

The muscles which depress the corners of the mouth are important, both the *triangularis* and the *depressor anguli* which share in the creation of expression. The lower lip is more expressive than the upper, though passion is chiefly expressed by the upper lip. It has been said that nature always intended the human countenance to bear a pleasant agreeable expression as there are five muscles to hold the corners of the mouth upward, but only two to depress it.

The *Occipito Frontalis* muscle is important in arching the eyebrows in surprise or doubt, while the *Orbicularis Palpebrum* which surrounds the eyelids helps to shut them closely over the eye. A muscle raising the eyelid is the opposite of this. In sleep, languor, or depression, in fainting and in approaching death, the four voluntary muscles relax their control and the eyeball is directed upward. In intoxication and in illness of

some kinds there is a heaviness of the eyelid, or a tendency to squint, to see double. The eye rolls upward even as the lids droop. The relaxation of the lower facial muscles further adds to the expression of degradation or depression.

Of the muscles of the lips and cheek, the orbicularis oris muscle which surrounds the mouth is perhaps the most important, playing an especially prominent part in the play of features in the various emotional states.

Warren gives the following table of emotions and sentiments.*

EXPRESSIVE.		REPRODUCTIVE.	
<i>Attitude.</i>	<i>Emotion.</i>	<i>Attitude.</i>	<i>Emotion.</i>
Cheerful	Joy✓	Affectionate	Love✓
Despondent	Grief	Lascivious	Lust
Dazed	Shock	Jealous	Jealousy
Frivolous	Mirth	Motherly	Tenderness
Zealous	Ecstasy		
Erratic	Restiveness		
Romantic	Exuberance		
Devout	Wonder		

DEFENSIVE.		AGGRESSIVE.✓	
<i>Attitude.</i>	<i>Emotion.</i>	<i>Attitude.</i>	<i>Emotion.</i>
Cowardly	Fear✓	Hostile	Anger✓
Courageous	Fear	Vindictive	Hatred✓
Aversion	Disgust	Malicious	Envy
Cautious	Timidity	Ambitious	Pride✓
Reserved	Shame	Arrogant	Pride
Servile	Awe	Bold	Exultation

Warren. Human Psychology. (41) *Used by permission of Houghton-Mifflin Co., Boston, Publishers.

SOCIAL.	
<i>Attitude.</i>	<i>Emotion.</i>
Devoted	Affection
Friendly	Cordiality
Compassionate	Pity
Attachment	Gratitude
Loyal	Admiration
Antagonistic	Detestation
Sullen	Revenge
Distrustful	Suspicion
Supercilious	Scorn

INSTINCTIVE AND SENTIMENTAL	
<i>Attitude.</i>	<i>Emotion.</i>
Miserly (avaricious)	Acquiring instinct
Orderly	Cleanliness
Nomadic	Wandering Inst.
Credulous	Belief
Skeptical	Disbelief
Perplexed	Doubt
Biased	Belief and Disbelief

Exercise. Study the above list of sentiments and accompanying emotions. Try to feel the emotional state appropriate to each sentiment, and to express the same in posture, bearing and facial expression. It may be helpful to try to approximate the attitude and facial expressions before a long mirror.

*Synopsis of Facial Expression (After Allport)**

	PAIN AND GRIEF.	AMAZEMENT and FEAR	ANGER	DISGUST	PLEASURE (Smiling and laughing.)
Brows and forehead.	Raised Oblique and down. Knitted Wrinkles. <i>V.</i>	Raised Wrinkled (amazement) Terror as in pain.	Lowered Knitted Oblique in and down. Wrinkles <i>V.</i>	Slightly knitted. Wrinkles <i>V.</i>	Smooth ex- cept in vio- lent laughing.
Eyes.	Partly or fully closed. (tears)	Wide open.	Wide open.	Varying. Usually narrow, re- sembling smiling.	Partly shut. Lower lid raised. "Crow's feet."
Nose.	Compressed (thinned) Elongated.	Alae dilated (in terror).	Alae dilated (in rage)	Raised Shortened. Wrinkled. Alae raised at side.	Normal.
Mouth.	Lowered. Open and skewed (in groaning)	Opened Wide and fixed (in strong fear.)	Rectangular rigid opening. Exposing lower teeth.	Slightly elevated.	Raised. Upper teeth show. (Laugh) Closed (Smile)
Lips.	Depressed at corners. Lower lip trembling.	Somewhat depressed at corners.	Depressed at corners. Lower lip tense.	Depressed at corners. Lower lip protruding.	Corners drawn back and up. Upper lip raised tense.
Lower jaw.	Drooping.	Immovable.	Rigid protruding.	Raised.	Dropped and trembling (in laughing)
Head.	Sunk forward.	Drawn back or averted.	Advanced.	Sometimes averted.	Thrown back (in laughing.)

*Allport. Social Psychology. (1)

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Note: H and V denote horizontal and vertical.

To be able to produce desired facial expressions memorize the columns vertically; to be able to identify expressions produced by others, memorize them horizontally.

Anger.

ANGER in animals is supposed to precede biting. The grin or snarl which often accompanies it, appears with the uncovering of the fangs. In animals the chief expression observable is that of rage or anger, whereas in man the muscles of expression intensify the obvious bodily signs of rage and anger seen in animals. The eyes strike terror to the beholder, and the snarl or sneer in human beings indicates fury. Respiratory disturbances and rapid heart beat are physiological accompaniments of the mental state.

Anger and joy, being exciting emotions at any time, react on both heart and brain. When terror approaches, desperation often causes both man and animals to become dangerous, the glandular emergency-meeting devices, releasing their products, and increasing the strength and fury of the reaction. Vocalization often accompanies rage, anger and pain in animals. It may be a roar intended to strike terror to the victim or offender. It has been shown by Spencer (34) that the human voice differs considerably in quality, loudness, pitch and intervals in the different emotional states. According to Darwin, the bristling of the hair in animals is sometimes approximated in the anger or rage reactions of the insane. The rage of Macbeth bursts forth when the messenger appears to give news of the approach of Burnham wood;—

MACB. "The devil damn thee black, thou cream-faced loon!
Where got'st thou that goose look? *Macbeth. Act V. Sc 3.*

Fear.

TREMBLING is one of the earliest signs of fear. It may also be a result of physiological states like exhaustion,

chill, injury, fatigue or cold. It sometimes accompanies great joy or excitement, due to the fact that any sensitive nerve may react on the heart even though pain is not present, and may cause disturbances of respiration, rapid heart beat and vasomotor disturbances of circulation as in blushing and pallor.

According to Spencer's law, the circulatory system will first be affected in emotion, then the facial and respiratory muscles, next the upper extremities and after that the lower extremities. Finally the entire body may become involved in intense states of emotion. (34) p. 109, 111.

In fear, there is increased muscle tension, rapid heart beat, and disturbed respiration, while the dilation of the pupils, the staring expression of the eyes and the elevation of the eyebrows are facial forms of expression. As the fear is intensified there may be spasmodic actions of the chest, neck and shoulder muscles, with short, rapid breathing. There may be a convulsive motion of the lips and the cheeks may be ashy pale. When Horatio and Bernado behold the ghost they say in hushed tones;—(35)

BERN. How now, Horatio! you tremble and turn pale.

Is not this something more than fantasy?

BERNADO. Looks it not like the king? Mark it Horatio.

HORATIO. Most like: it harrows me with fear and wonder.

Excessive emotion, by intensifying the heart beat may act like a drug and paralyze action. It may instead quicken the thinking, and cause the individual to react more rapidly than under normal conditions. Fear and anger are closely related and the aggressive signs of anger may be the outward manifestations of fear. Hamlet in attempting to break away from the

grasp of his friends first appears angry and then as he succeeds in eluding their grasp he becomes quiet and speaks to the ghost in different strain;—

HAM. Unhand me gentlemen!

By heaven, I'll make a ghost of him that lets me!

I say, away! Go on; I'll follow thee.

(*Exeunt Ghost and Hamlet*). Act I. Sc. IV.

The physiological accompaniments of fear are suggested in the *Ghost's speech to Hamlet Act I, Sc V.*

GHOST (to Hamlet)—But that I am forbid

I could a tale unfold whose lightest word

Would harrow up thy soul, freeze thy young blood,

Make thy two eyes, like stars, start from their spheres,

Thy knotted and combined locks to part

And each particular hair to stand on end,

Like quills upon the fretful porpentine".

Villany and horror may be expressed by unnatural paleness, as in the case of Clarence's murderers, whom he addresses thus:—

"How darkly and how deadly dost thou speak!

Your eyes do menace me. Why look you pale?"

Richard III. Act 1, Sc. 4. (Shakespeare).

Love or Tender Emotion

BAIN states, "Tenderness is a pleasurable emotion, variously stimulated, whose effort is to draw human beings into mutual embrace" (2)

When Penelope recognizes her husband her tender feelings are described as follows:—

"Then from her eyelids the quick tears did start

And she ran to him from her place, and threw

Her arms about his neck, and a warm dew
Of kisses poured upon him, and thus spake”.

Book xxiii. st. 27. (46)

The expression of affection employs no special sets of facial muscles. Its accompaniments of animation and joy may heighten the state of well being of the organism in dignified, noble representations of the tender emotions. The elation may be unreasoning and with frequent outbursts of laughter or giggling of the school-girl type, to be received tolerantly as a manifestation of the uncontrolled expressions of adolescent love. Among the Greeks its portrayal was on a dignified, lofty plane which frequently approached tragedy.

When family hatred interferes with Romeo's love of a Capulet, we find him saying, to Benvolio:—

“This love thou hast shown
Doth add more grief to too much of mine own.
Love is a smoke raised with the fume of sighs;
Being purged, a fire sparkling in lovers' eyes;
Being vex'd, a sea nourish'd with lovers' tears:
What is it else? a madness most discreet,
A choking gall and a preserving sweet.”

Romeo and Juliet I, Sc 1.

When Swanhild and Olaf meet, in *The Winterfeast*, we have the love element in their early speeches:—

Olaf. Here have we spoken but a little while together, and yet mine heart hath dreamed upon thee always.—There was a haunting of thee 'ere I saw thy face.—I have known thee other worlds than this.

Swanhild. Meseems I have danced with thee down the ways of dreamland; hither and thither we have tripped together in the moonbeams, thou and I, to the music of the Waves.

Olaf. Lo, now, here we be alive together, thou and I! Me-

thinks there were no sweeter death in all the world than die for thee.

The Winterfeast. Act IV. (22)

The effect of the tragedy of futile love is sometimes heightened by comedy lines as when Cyrano de Bergerac, (31) dying, composes his epitaph to entertain Roxane and in the noble attempt to lessen her grief:—

CYRANO.

“Philosopher, physician,
Rhymer, swordsman, musician,
And aerial traveller,
Great in fencing,
A lover too—to his sorrow—
Here lies Hercule-Savinien
De Cyrano de Bergerac.

But pardon me, I am going away, I cannot cause delay: you see the moonlight has come to take me!” (He falls in his chair, as Roxane’s tears fall. He then by a supreme effort arouses himself, brushes them all aside and leans against the tree. As the apparition of death appears, he draws his sword and addresses the apparition thus:—)

“Yes, you have torn everything from me, the laurel and the rose! Take them! In spite of you, there is one thing I shall take with me, and to-night, when I enter God’s house, my salutation shall sweep the blue threshold, with something free from creases, free from stain, which I shall carry in spite of you,—and that is—

ROXANE. That is—?

CYRANO. (Opening his eyes, recognizes her and says with a smile) My plume!

Act V. Sc. V.

Terror.

IN terror we find the elevation of the eyebrows, eyes intent upon the source of fear, breath spasmodic, chest elevated, short and rapid breathing, convulsive movements of the lips, and often an ashy pallor of the face.

There is a profound and prominent disturbance of the organism, which is apparent in the muscles of expression.

Terror is sometimes shown by unnatural paleness.

When the messenger enters to give Cassius news of the unfavorable progress of the battle, he says, in distraction:—

PINDARUS. Fly further off, my lord, fly further off:

Mark Antony is in your tents, my lord:

Fly, therefore, noble Cassius, fly far off!

Julius Caesar, Act v, Sc. 3.

The fear of Macbeth manifests itself, when he sees the ghost of Banquo at the banquet and exclaims:—
(38)

MACB. Thou canst not say I did it: never shake

Thy gory locks at me”.

and on the second appearance of the apparition he cries:—

MACB. Avaunt! and quit my sight! let the earth hide thee!

Thy bones are marrowless, thy blood is cold;

Thou hast no speculation in those eyes

Which thou doest glare with.

Lady Macbeth, alarmed, attempts to conceal the true state of affairs by exclaiming:—

LADY M. Think of this, good peers,

But as a thing of custom; 'tis no other;

Only it spoils the pleasure of the time.

— — — — —

Stand not upon the order of your going,

But go at once.

Again Macbeth's anger is akin to fear when he exclaims to the servant:—

MACB. Go prick thy face, and over-red thy fear,
 Thou lily-livered boy. What soldiers, patch?
 Death of thy soul! those linen cheeks of thine
 Are counsellors to fear. What soldiers, whey-face?

SERV. The English force, so please you.

MACB. Take thy face hence!

Macbeth, Act V, Sc. 3.

Grief, Sorrow, Despair, Pain.

IN grief, there is a furrowing of the forehead, with vertical and horizontal wrinkles appearing, according to the degree of intensity of the emotional state. The eyebrows assume an oblique position, and the corners of the mouth droop. The statue of Laocoon has been criticized as untrue to life in that despair and suffering are represented only by horizontal furrows of the brow, whereas if true to life, vertical furrows would also appear. (Laocoon, Louvre).

In pain, the jaws are tightly fixed and the teeth may grind; the lips droop or are drawn laterally and the nostrils are dilated; the eyes are usually uncovered and the eyebrows raised. In distressed states of mind the eyebrows are knit and the nostrils agitated. (9)

EXAMPLES.

Canst thou quake and change thy color,
 Murder thy breath in middle of a word,
 And then again begin, and stop again,
 As if thou wast distraught and mad with terror?"

Richard III, Act 3, Sc 5.

But trembling every joint did inly quake,
 And falt'ring tongue at least these words seem'd forth to shake.

Færy Queen Book 1, Cant. 9, V. 24.

Adam, soon as he heard
The fatal trespass done by Eve, amazed
Astonied stood and blank, while horror chill
Ran through his veins, and all his joints relaxed.

Paradise Lost. Book ix. v. 888.

With the feeling of grief, the limbs seem relaxed and nerveless, the breathing becomes almost imperceptible and drawn at long intervals; the neck and throat are convulsed, the lips quiver or become ashy pale, while a quiver now and again envelops the entire frame.

In pain, there is violent nerve tension. The various emotions and passions attributed to pain have certain distinguishing features, such as the energetic action of tremor which is the effect of intense excitement. If the emotional state be prolonged, or if pain be present in intense degree, this is followed by a second stage of exhaustion, debility and loss of muscle tone, or complete relaxation and prostration.

In grief or suffering we often find weeping. The teeth may be clenched, or ground, the body may writhe in agony and pallor, trembling or prostration may occur. The corrugator muscles of the forehead contract pulling the forehead into transverse wrinkles, the upper lip is drawn upward, and the face and scalp are reddened. Weeping is especially common in uncontrolled emotional types, as among the insane and idiots. Men weep more rarely than women and sobbing is a characteristic of human beings only. The contraction of the muscles about the eyes is intimately connected with the appearance and secretion of tears.

(9)

Grief, Sorrow, Pain.

ROMEO, on discovering Juliet's death-like figure in the tomb cries;—in despair and grief:—

ROMEO. O, here

Will I set up my everlasting rest,
And shake the yoke of inauspicious stars
From this world-wearied flesh. Eyes, look your last!
Arms, take your last embrace! and lips, O you
The doors of breath, seal with a righteous kiss
A dateless bargain to engrossing death.
Here's to my love (drinks the potion) O true apothecary,
Thy drugs are quick. Thus with a kiss I die".

Romeo & Juliet. D. C. Heath. 1913. P. 114. Act 5, Sc 3.

Brutus, receiving the news at the battle of Phillippi, despairing says:—

So fare you well at once: for Brutus's tongue
Hath almost ended his life's history:
Night hangs upon mine eyes: my bones would rest.
That have but labored to attain this hour.

Julius Caesar. Act V. Sc 5?

Grief is also expressed in these lines:—

"Never to see her! Never to let her know!
"My last hope now is gone and I can fight no longer!"

And the stricken cry of Herdisa in the Winter-feast:—

HERDISA. Woe, woe, woe for hate and bitterness, and the
cruel hunger for men's red blood! Woe for the darkness of
the soul and the clouded counsels of long hidden lies! Woe
for love—that sting of sorrow! Woe for the mighty harvest,
the harvest of death, that hath swept pitiless o'er all the
world to-night!

Winterfeast. Act V. P. 153. (23)

Joy, High Spirits, Devotion.

LAUGHTER occurs as a result of pleasurable states of feeling. It may be the result of a sudden sense of one's own superiority, due to an incongruous situation, to surprise, or to other stimuli of a like nature. The smile is often observed in the blind, who cannot have acquired this type of expression through imitation. We also find blind persons showing expressions of pleasure, affection, devotion, and joy. Laughter is common among idiots and imbeciles and is often easily aroused. In some forms of insanity, laughter is characteristic of the disorder, though generally laughter among the insane is less frequent than among normal people. Excessive laughter is often accompanied by tears; Sir Joshua Reynolds remarks on the similarity of expression observed in the joy of a dancing Bacchante and the grief of a Magdalen. (26)

The smile is the first stage in the development of laughter. The mouth of the infant is especially expressive. Darwin observed a smile in his infant at 45 days. Others have observed it even earlier. The first sounds of laughter are rather uncontrolled and resemble sobbing. The unwrinkled brow implies a cheerful or happy state, good spirits and the opposite of grief or suffering. Darwin writes that the "face expands in joy but lengthens in grief". (P. 211)

A light touch as in tickling causes laughter. Similarly the imagination is said to be tickled when a thought causes laughter.

In laughter the upper and lower orbicular muscles of the eyes are more or less contracted and the corners of the mouth are drawn upward and back.

Laughter and comedy are often employed by

Shakespeare for contrast to relieve the tragic element. In "Measure for Measure" in the prison scene between the Provost and Pompey we find an example of a sort of grim humor:

PROV. Come hither, sirrah. Can you cut off a man's head?

POM. If the man be a bachelor, sir, I can; but if he be a married man, he's his wife's head, and I can never cut off a woman's head".

Meas. for Meas. Act IV. Sc. ii.

The feeble wits of old Gobbo present a sharp contrast to the ridicule and facetious wits of young Gobbo, in the *Merchant of Venice* (*Act II. Sc. 2.*)

Whitman writes of joy:—

O to make the most jubilant song!

Full of music—full of manhood, womanhood, infancy!

Full of common employments—full of grain and trees.

O the orator's joys!

To inflate the chest, to roll the thunder of the voice out from
the ribs and throat,

To make the people rage, weep, hate, desire, with yourself,

To lead America—to quell America with a great tongue." (44)

Joy, happiness and laughter are found in the following lines:—

Haste thee, nymph, and bring with thee

Jest and youthful jollity

Quips and cranks and wanton wiles,

Nods and becks and weathed smiles

Such as hang on Hebe's cheek

And love to live in dimple sleek.

Sport, that wrinkled care derides,

And Laughter, holding both his sides.

Come, and trip it as you go,

On the light fantastic toe.

Milton. L'Allegro.

Various moods are suggested in Cyrano's speech* in answer to Viscount de Valvert:—

The Viscount. You—you have a very—ah—a very—large nose.

Cyrano. Is that all? One might make—oh, my Lord! many remarks, by varying the tone, for example: listen:—

Aggressive: "Sir, if I had such a nose, I should have it amputated at once!

Friendly: "It must dip into your cup: in order to drink you must have a goblet made for you!

Descriptive: "It is a rock! It is a peak! It is a cape! What did I say? A cape? It is a peninsula!

Curious: "For what do you use that oblong capsule? For an inkstand or a scissors-case?

Gracious: "Do you love the birds so well that you take fatherly interest in holding out that perch for their little feet?

Savage: "When you enjoy your pipe, sir, does the smoke ever come out of your nose without some neighbor crying that the chimney is on fire?

Warning: "With such a weight dragging on your head, take care that you do not fall forward on the ground!

Tender: "Have a parasol made for it, for fear its color might fade in the sun!

Pedantic: "Only the animal, sir called by Aristophanes the Hippocampelephantocamelos, could have had so much flesh and bone under its forehead.

Flippant: "What, my friend, is this hook in style? To hang one's hat on, it is surely very convenient!

Emphatic: No wind, except the mistral, could make you catch cold entirely, O magisterial nose!

Dramatic: When it bleeds it is the Red Sea!

Admiring: "What a sign for a perfumer!

Naive: When can this monument be visited?

Respectful: Allow me, sir, to salute you: that is what is called having a house of one's own!

**Cyrano de Bergerac. Act I, Sc 4. Pp. 35-37.*

Rustic: Ha, there! Is that a nose? It is a giant turnip or a dwarf melon!

Military: "Point against the cavalry!"

"That is very nearly what you would have said to me if you had a little knowledge of letters and a little wit: Fool!"

Ill Temper, Sulkiness, Thought.

DARWIN calls attention to the action of the corrugator muscles of the forehead in frowning, during deep thought, meditation or displeasure (10) The frown accompanies many moods and may indicate meditation, deep thought, perplexity, ill temper, a disagreeable mood or a difficult mental problem.

Not only is the frown found in infancy, but so frequent is its occurrence that it easily appears in adult expressional states such as anger, fear, jealousy, suspicion, distrust, and in states of hunger and pain. The frown is associated with that which is unpleasant or disagreeable and the wrinkling of the frontal muscles seems to be a fundamental expression of the mental state.

In abstraction and deep thought, the lower eyelids are raised and wrinkled and there is a characteristic "vacancy" of expression, while the individual seems only half conscious of his surroundings. As the muscles of the eyes relax and the abstraction becomes more complete, there is often a divergence of the eye muscles.

In addition to the frown, if the mouth be firmly closed, we find an appearance of stubbornness or sullenness. In children the lips are pouted, this expression often preceding the bursting into a loud cry. Darwin mentions certain gestures or actions which often accompany this state of mind, such as bringing the

hands to the face, or resting the forehead on the palm of the hand. (11)

The firm chin and firmly closed mouth have long been supposed to indicate a corresponding decided character, while the converse of this, gaping mouth and weak chin indicate weakness of character. (12) The make-up used to indicate these characteristics is a part of the stock-in-trade of the professional make-up man, who draws in the lines and shadows or accentuates natural lines in order to produce the desired effect upon the audience.

Lady Macbeth's determination to realize her ambition is apparent when she says

LADY M. Glamis thou art, and Cawdor, and shalt be
What thou art promised—Hie thee hither,
That I may pour my spirits in thine ear,
And chastise with the valour of my tongue
All that impedes thee from the golden round,
Which fate and metaphysical aid doth seem
To have thee crown'd withal.

Macbeth. Act 1, Sc. 5.

And again when Macbeth wavers and says "If we should fail?"

Lady M. We fail!

But screw your courage to the sticking-place,
And we'll not fail. When Duncan is asleep— (etc).

Act 1. Sc. 7. Macbeth.

Rage.

IN rage, both heart and respiration are profoundly affected. The skin may become reddened or pallor may result. The nostrils quiver or dilate and excitement lends energy to the muscles. Gestures often become frantic and purposeless. In children, rage assumes the form of a temper-tantrum accompanied by

screaming and kicking, unless attempts to control or sublimate the expression of anger have been developed by family control. In the children's nursery rhyme we have an illustration of the wolf's attempt to terrorize the victim, when he exclaims,

"I'll huff, and I'll puff, and I'll blow your house in!"

This mood is expressed in the line "Now could I drink hot blood, and do such bitter business as the day would quake to look upon."

The snarl often accompanies expressions of anger and is said by *Dr. J. Chrichton Browne** to be characteristic of the insane and of the idiotic.

Indignation is a lesser form of rage, the physiological accompaniments being less striking and less intense. The playful sneer—or the snarl is found in man as well as in animals.

Disdain, Contempt, Guilt, Pride.

CONTEMPT is a somewhat weaker form of emotional expression than is disdain or scorn. The three are distinguished with difficulty in photographs, however. The use of muscles around the nose and mouth is especially associated with the expression of contempt or disdain. In some cases, the nose is turned slightly upwards. The corners of the mouth are drawn down and the disdainful aspect closely resembles the lip movements of pouting in children, or their refusal of food.

Experimenters find it difficult to distinguish any particular expression appropriate to guilt, jealousy, avarice, revenge, suspicion, deceit, slyness, ambition, pride, humility and other forms of emotional expres-

*Darwin: *Expression of the Emotions in Man and Animals*. P. 242.

sion, but in children oftentimes these expressions may be quite clearly observed.

Men differ in their ability to conceal emotional states, but sometimes guilt and suspicion are revealed in accessory muscle movements, and muscle cues may be given by sets of muscles other than those of the countenance. The avarice of Uriah Heep was admirably portrayed by the late Leland Powers in close, furtive movements of the arms and hands, a drawing together of the lapels of his coat and a writhing, mock-humility in his bodily attitude, together with the incessant wringing of his hands, almost as if he were fingering the money of his employer. Yet in speech he protested his "so humble" character; here again the muscles of the face betrayed him through the snarling muscles and corrugated eyebrows. (7)

Denial and Affirmation.

THE refusal of food in infancy is thought to be the origin of the gesture of negation. It later becomes attached to other forms of refusal, or denial. Acceptance of food causes a forward and downward movement of the head and so it is believed that the nodding of the head in affirmation has developed on the basis of early acceptance of acceptable foods and the like has come to be associated with other forms of affirmation. Darwin found that these signs were not universal however among all human beings. (13)

Surprise and Embarrassment.

THE eyebrows are raised in surprise as if to give a clearer view and sometimes the mouth is opened. In

close attention one opens the mouth to breathe more quietly and this seems to be the origin of the open-mouthed expression of surprise which readily becomes fear or terror.

In embarrassment and in guilt, blushing often occurs as in other emotional states of self-consciousness. It does not usually extend below the head and neck. It is often accompanied by marked mental confusion, as in stutterers, children, and self-conscious adults. It is a symbol of shyness, modesty, shame, sensitive regard for the opinions of others, and humility or self-depreciation. (14)

"Movements associated through habits with certain states of mind, are partially repressed by the will, the strictly involuntary muscles as well as those which are least under control of the will, are liable still to act; and their action is often highly expressive. The checking of one habitual movement sometimes requires other slight movements; these latter serving as a means of expression." (P. 49) *Darwin*.

Stage Interpretations of Emotions.

BOOTH, in his interpretation of a few words of Shylock, changed the stage traditions of his day, shifting the sympathy of the audience from that of antipathy for the Jew to that of pity. When the Christian demands whether or not he is content, Shylock slowly answers:—

SHYL. I am content.

Merchant of Venice Act V.

Instead of regarding Shylock longer as the harsh usurer, the audience feels in Booth's interpretation that the Jew has become a broken, aged man, deprived

of everything in life which he holds dear, his daughter Jessica, his wealth and Leah's ring.

Longfellow wrote upon hearing Mrs. Siddon's readings:—(27)

“How our hearts glowed and trembled as she read!
Interpreted by tones the wondrous pages
Of the great poet who foreruns the ages,
Anticipating all that shall be said”.

In the same way, the portrayal of intense emotion in a single phrase was conveyed by Macready in the role of Werner.* When Stralenheim questions him, he replies in curtly repellent tones to S's questions:—

STRALENHEIM. Have you been here long?

WERNER. Long? (with abrupt surprise)

STRALEN. I sought an answer, not an echo!

WER. (*intense hatred*) You may seek both from the walls!

I am not used to answer those whom I know not!

Later when *Stralenheim* observes:—

STRALEN. Your answer is above your station.

WERNER'S “Is it?” contains a transition from ironical humility to scorn and loathing which one could scarcely expect to find expressed in two words.

Forrest's biographers (28) write vividly of his interpretation of the character of Viriginius as he addresses the Roman tribune, saying:—

VIRG. Does no one speak? I am defendant here!

Is silence my opponent? Fit opponent

To plead a cause too horrible for speech!

“His tones were like vibrations struck from perfect chords by an Orpheus, and found an echo in the hearts of his audience.—The thunder tones of his voice rang out thru the theatre as he exclaimed,—

*Werner: Lord Byron, Italy, 1822

“Lo, Appius Claudius, with this innocent blood
 I do devote thee to the eternal gods!
 Make way there!
 If they dare this desperate weapon that is
 Wet with my daughter’s blood, let them!
 Thus! thus it rushes amongst them!

Away there! Away! Away!

When Charlotte Cushman was asked how she knew how to produce the effect of light and shadows which made her interpretation of Meg Merrilies so effective she replied:

“I don’t know. I only *feel* where they *ought* to come.”
 (Rowland, P. 151)

Cooke, the English actor, came to America at the age of fifty-five, to make his debut in Richard III. His acting as Sir Giles Overreach in Mastersinger’s “A New Way to Pay Old Debts” has been described for its realism as follows:*

“The acting of Mr. Cooke at this terrible point can never be forgotten. His attempt to draw his sword, and the sudden arrest of his arm, palsied and stiffened and rendered powerless, as if by the stroke of Heaven’s avenging thunder—the expression of his countenance at this moment, and his sinking convulsed, and then lifeless, into the arms of his servants, were so frightfully impressive and true to nature as to leave an image never to be erased.”

Miss Hallam, who as Cymbeline inspired Chas. Peale to do her portrait is thus described in the Maryland Gazette of that time:—**

“On finding that the part of Imogen was to be played by Miss Hallam, I instantly formed to myself the most sanguine

*Memoirs of George Frederick Cooke, by Wm. Dunlap.

**Nov. 7, 1771 Maryland Gazette.

hope of entertainment. But how was I ravished on experiment! She exceeded my utmost idea. Such delicacy of manner. Such classical strictness of expression! The music of her tongue, the *vox liquida*, how melting! Methought I heard once more the warbling of Cibber in my ear. How true and thorough her knowledge of the part she personated! Her whole form and dimensions how happily convertible and universally adapted to the variety of her part.” *Hornblow. (16)*

John Hodgkinson, who came to America to act at the age of twenty-six is thus interestingly described as to his ability to portray human emotions:—

“In the whole range of the living drama, there was no variety of character he could not perceive and embody from a Richard or a Hamlet down to a Shelly or a Sharp. To the abundant mind of Shakespeare his own turned as a moon, that could catch and reflect a large amount of its radiance. Nor were his physical powers inferior to his mental; he was tall and well-proportioned, though inclining to be corpulent; with a face of great mobility, that showed the minutest change of feeling; whilst his voice, full and flexible, could only be likened to an instrument that his passions played upon at pleasure”. (16) P. 192.

Mary Ann Duff who has been called the American Siddons, made her debut in Juliet and became a great favorite. Of her a critic wrote, “She was sacred in the majesty of grief; fascinating in tears—She was endowed by nature with every mental faculty and every physical requisite for pure tragedy; and in that distinct line, and in that line only, education and experience raised her to the highest rank ever attained on the stage in America.”—

The varying expression of her features has never been surpassed, while her voice was as soft and musical in its quiet tones as was that of Mrs. Cibber, wild and plaintive in dis-

traction and despair, yet resonant and thrilling in its forceful utterances. In playing Herminone to Kean's Orestes she shared the honors with that greatest of actors of his day." (29)

Edmund Kean's mastery of the range of human emotions is shown in the criticisms of his performances of Richard III, Hamlet, Othello, Macbeth and Lear.

"It was especially in the impersonations of the great creations of Shakespeare's genius that the acting of Kean was displayed in its highest form.—His countenance was strikingly interesting and unusually mobile. He had a matchless command of facial elocution. His fine eyes scintillated even the slightest shades of emotion and thought." (29).

Among the great comedians Charles Mathews Sr., was noted for his characterizations. Enjoying the friendship of many famous men and women of his day in England, he proved no less popular in America. His mimicry, fidelity of portrayal of numerous types, characters and dispositions, his ready anecdotes and talent for comic songs and linguistic ability at imitating dialects, made him a stage favorite everywhere he appeared. (29)

Hume's advice might safely be followed by the actor. "Be a philosopher, but amidst all your philosophy, be still a man". In acting as in living, it is necessary to maintain a balance between intellect and emotion, between artistic representation, and offensive realism. For art's sake the actor must permit only the uncontrollable signs of emotion to appear, suggesting both the depths of the emotion felt, and the restraint by which he guides his action.

After many years of experience in the theatre arts, in play producing, directing and the like, Stark Young (48) deplores the present day tendency to discredit intensive training and careful preparation for the art

of the theatre. The modern actor often prefers a sort of *impressionistic*, ready-made attempt at depicting emotion, feeling that it is artificial and unnatural to make a studied attempt at interpreting the posture, gesture, and expressional attitudes of a given character. He believes that the "feeling" of the moment is a satisfactory guide and he dislikes to "work out" his business in accordance with the desires of the stage director, because he fears it will not be spontaneous, and therefore external.

Training for Dramatic Expression of Emotion.

WHILE the highest ideals of stage art should enable the actor to arrive by inspiration at the perfection of performance and interpretation, we know that this ideal is often unattainable for a large number of actors and actresses, as stage arts are subject to imperfections like other arts. Instinct and improvisation are not sufficient as a background for this emotional art, the interpretation of life, and stage culture like other forms of culture, depends upon a long process of unfoldment, personal growth, training and experience. It usually does not burst forth spontaneously.

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Chapter VIII

MENTAL IMAGERY AND IMAGINATION

Mental Imagery Defined.

A MENTAL image is a fundamental element of the human mind. It follows after the perception of a fact in experience and results from the excitation of sensory centers in the brain cortex. By the grouping of images together we organize them into *ideas* or *percepts* upon which we may draw in imagination, when the actual stimulus which first caused the image, is no longer present.

The mental image is aroused by some stimulus, visual, auditory, tactual, gustatory, olfactory or kin-aesthetic, and our perception of the *nature of the* stimulus as it occurs, first gives rise to sensation, then to an image. Imagine yourself to be seated in a theatre before the curtain rises. First you are conscious of an *auditory image* as you hear the hum of voices around you; then you are aware of a *visual image* as I suggest that the musicians have entered. As they tune their instruments for the evening's performance, I may suggest that the sound is not agreeable but rather rasping at first, giving way to pleasant, musical tones as the *ensemble* gets under way, with the overture from *William Tell*. In response to the suggestion you again form *auditory images* of the sounds mentioned.

Imagine that the evening is warm, and that an electric fan above you is wafting cool breezes in your direction. You are now conscious of *thermal images*,—

one form of a *tactual impression*. Suppose someone passes you a box of chocolates, and you think of nibbling at a confection. Are you not aware of *gustatory images* at this point? Suppose an usher now enters and seats a beautifully-gowned woman directly in front of you, and you catch the scent of delicate perfume, arousing an *olfactory image*.

Fancy that you have been seated for some time, and that you are rather tired, after a busy day. Your muscles seem stiff, and your limbs are weary. You shift your position because of this muscle-joint-tendon sensation, and the impression of *weariness* is a form of *kinaesthetic imagery*, as you can quite well imagine how you would feel under the circumstances suggested.

Images, then, furnish us with the chief means of independent thinking. Images are something *more* than mere sensation. A sensation may give *rise* to an image, but the *sensation* came *first*, as a result of some sensory *process*, and was followed *by* the perception of its *meaning*. This act of perception constituted the *image* which arose in your mind following the sensation aroused by my words, in the opening paragraphs of this chapter.

Memory.

IMAGES, then, are dependent upon memories. Recall furnishes the basis for *mental imagery*. Speech is based upon the power to recall *speech movements* and combinations of *motor activities associated with speech*. The responses which we have *learned to make* to a given situation aid in combinations of movements leading to new adjustments, and a child's "mental image" is a sort of "memory picture" or mental pattern of the thing experienced in the past, and directs

his adjustment towards any experience which may occur in the future.

How Images Are Aroused. Individuals vary widely in regard to kind and quality of mental images called up in response to a stimulus,—be the stimulus a word, a sound, a touch, an odor, a taste or a bodily sensation associated with movement. Images may be aroused readily by *word-sounds*, and we learn to think in units of many words, and to draw upon the memory storehouse in the cerebral cortex for the patterns which we wish to employ in forming figures of speech, in conversation, in reciting poetry, in recalling lines to memory and in general spontaneous speech. Verbs, to the small child, are *action* words and suggest *movement*. A single word is expressive of a complete idea to the infant. "Apple" may be as expressive to the infant as the word *Garibaldi*, to the adult Italian, or the name *Bismarck* to the German. They associate the *sound* of the word with experience, and the images appropriate to the word are called forth upon application of the stimulus-word, with the sureness and swiftness of a semi-reflex activity.

Try over the list of words at the end of this chapter (see Exer. I.) and try to determine the type of imagery which they arouse. You will find that they suggest a great variety of ideas, but are *colored* by *your personal experiences* with these words and with the activities which they suggest. In speech, imagery types overlap, and the mind glides from peak to peak, blending now auditory, now visual, now kinaesthetic, gustatory, olfactory images, or abstract ideas suggested by these, and by means of these images and ideas speech is *electrified*, made vivid, comprehensive and alive. Pronounce the words *World War* to a

veteran and then to a civilian who has never been in service and record the vast differences in imagery which the two call to mind. You will find that images vary widely, between different persons, and at different times in the same person, according to the *nature* and *efficacy* of the *stimulus words*, in speech, and according to the experiences of both speaker and auditor.

Types of Imagery.

IN general, investigators are agreed that most of us use more visual and auditory images than olfactory, gustatory, or tactual images, though in infancy the tactual image is of first importance and perhaps, therefore, deserves a somewhat higher place in the scale of mental operations than that which it has hitherto been accorded. The importance of tactual images to the blind is well known. They sometimes seem extraordinarily acute in the matter of localization of sound, and in detecting its exact nature, in identifying voices, or qualities of objects by means of tactual sensation, yet their equipment in the sensory realm is not different in any way from that of the seeing person. They have learned to depend upon cues *other than vision* and to become especially acute in the use of other sensory avenues. The skill with which the average blind person reads Braille with the fingers, and then translates into type-written form the notes first made in Braille, is a marvel to the uninitiated. The seeing person can afford to be less expert in the matter of finger-habit-movements, as the eyes can check his work as he goes. The blind person must have his habit pattern responses so perfected by training and motor automaticity that he can work without the important as-

sistance which the eyes are usually required to render. Thus he often seems stronger on the side of *motor imagery* than his seeing brother.

Motor and Auditory Images in Spelling. The importance of motor images in conjunction with auditory images in learning to sound letters, is mentioned by M. Stricker, (9) who states that he forms no letter without having a very clear *motor image* of the articulatory movement involved. M. Paulhan (7), in discussing the same subject says that the auditory image is paramount in his own case, meaning that the *sound* made in pronouncing the letter is the chief form of imagery which *he* gets. This illustrates the difference in types of imagery found in different people. It is possible that here we have one explanation of poor spelling, in that the poor speller may have imperfect motor images of the sounds represented, or that the auditory and motor images of the word as he knows it, do not correspond to the correct form of the word as ordinarily spelled. A common method employed in college in training poor spellers is the use of a combination of memory-processes which deepen the visual, auditory and motor images, strengthen the connections between them and form various associations between visual, auditory and motor speech movements.

Concrete and Abstract Images.

IF I say the word "rose" and ask you to spell it, do you think of the *sound* of the word, the way it looks when *written*, of the *perfume* of a rose, or do you merely think of the *class of flowers* to which it belongs without calling to mind any particular image? If the latter, you have an *abstract* image of the class to which

the rose belongs. If instead you call up any other form of imagery you have a *concrete* illustration of the word rose, to which you refer when I mention the word to you.

Children's images are largely of the *concrete type*; the words call to mind vivid illustrations of the particular class of objects to which the names refer. Many adults deal more and more in *abstract* images, and think more in terms of *classes of objects*, or they call up a concept of the general *meaning of the word*, without visualizing or otherwise identifying it with objects of its class.

The power to reason by the use of abstract ideas or images is an advance over primitive forms of thinking, yet there are certain dangers of which the public speaker should be aware. In the tendency to employ abstract terms, it may be that the speaker is out of touch with his audience, and that the use of concrete examples, vivid images and telling phrases found in concrete illustrations may more easily awaken the desired image in the minds of the listeners. A wealth of concrete illustrations and examples is a great aid to a speaker in handling an audience composed of many elements and many minds.

Imageless Thought.

THE tendency to think in abstract terms, with no sensory images present is sometimes called "imageless thought" and there are great individual differences in regard to the use of abstract and concrete imagery. William Jennings Bryan made an apt use of a *concrete image* when he said "You cannot crucify mankind upon a cross of gold". Senator Albert Beveridge used such

an image when he wrote "Westward the star of empire takes its way". We find a vivid image in these lines from Shelley,—

"My soul is an enchanted boat,
Which, like a sleeping swan, doth float
Upon the silver waves of thy sweet singing".

Again we find a wealth of imagination and imagery in the lines from the Merchant of Venice,—

- (1) "In such a night as this,
When the sweet wind did gently kiss the trees,
And they did make no noise"—
- (2) "How sweet the moonlight sleeps upon this bank".
- (3) "There's not the smallest orb which thou behold'st,
But in his motion like an angel sings,
Still quiring to the young-eyed cherubims,
Such harmony is in immortal souls;
But whilst this muddy vesture of decay
Doth grossly close us in, we cannot hear it."

(2)

Positive and Negative Images.

IMAGES revived after the original stimulus has passed are often so intense as to make one feel that the object which aroused the original sensation is actually present. Children, for this reason, often confuse *imaginary images* with *actual* images which have been present to the senses. In imagination they come so close to the actual perception of certain relationships that they believe them to be so. Children are often punished for telling lies, when they have not intentionally deceived anyone. This is particularly apt to be the

case with vivid, imaginative children and those who live overmuch in a dream-world.

The development of images differs not only between races but between men and women, between women and children, we are told. (4) Galton writes that undoubtedly there are many children who have difficulty in distinguishing between sensations and images,—between *subjective sensation* and *objective fact*.

Vividness of Imagery.

THERE is a great difference in the vividness of imagery in different people. To realize this one has only to listen to several people describing some event which was attended by each of the group. One recalls the costumes worn by the various guests; another recalls the table decorations and refreshments served; another recalls the conversation with a particular individual or group; another saw only the garden beyond the reception room. All people enjoy negative and positive images, however, though there is a difference in the vividness of these.

The phenomena of positive and negative images has been observed in the laboratory, the *positive* after image being the reproduction of the color just seen, and which continues to be present as a visual image after the color-stimulus which aroused it has been withdrawn. The *negative* after-image is the appearance of a color *complementary* to the one seen. That is, if you are looking fixedly at a red square on a white surface,—close your eyes, and then open them to look at a different place on the white surface, you will see not red, but green, its *complementary* color.

This after-image does not last long, but is fleet,

vague and fainter than the original sensation aroused by the color itself. In the same way, memory images are often less vivid, less intense and many times are less satisfying than the original experience.

Imagination and Imagery. In the realm of thought there is a fruitful field for the utilization of images,—and that is in the field of imagination. The prosaic, matter-of-fact, rule-of-thumb person who has never let his imagination run riot, and who has never dreamed more than “Horatio ever dream’t of in his philosophy”, has missed some valuable mental gymnastics. As a result of reproductive imagination we *have* mental images, and as a result of productive imagination we *create* mental images. Without the latter there could be no invention, no imagination, no progress.

Reproductive and Productive Imagination Defined.

WHEN we live over again a past experience, calling to mind sounds, sights and movements formerly experienced, we are *reproducing* in imagination a past experience. The actor must do this again and again, recreating his atmosphere, feelings, emotions, moods, postural tensions, facial expression, voice and gestures, so that he *creates the illusion* in the mind of his audience each time he appears, that he *is* what he *appears* to be. (8) To a lesser extent, this is true of the public reader.

When the imagination is harnessed to *other* combinations of ideas, thoughts, fancies, aspirations, ideals, or it may be suspicions and hatreds, then we have a new end-result, or a *productive imagination* at work, which is constructing *new lamps* out of *old*

bronze. In a sense the actor must do this, too, as he must be able to envisage the author's purpose, his conception of the play as a whole, his interpretations of the principal characters and their gestures, attitudes, movements, words, inflections and tones of voice, if he is to hold the mirror up to nature and make the words *live* in the sense in which the author and playwright *intended* them to live. It is even possible that a skillful actor may read into the lines more than the author himself saw in them. Browning never lived so poignantly within the printed page as when portrayed upon the stage in Hampden's version of the Ring and the Book. The beauty, grace and nobility of a Pompilia could not be imagined, in the printed page so well as when the words are accompanied by the gentle grace, appealing humility and distress of a Pompilia seen on the stage. The monk's defense is a stirring, eloquent document, in itself, but witness how much *more* it stirs the pulse and arouses the anger when one hears these lines spoken by a Hampden, in flowing, melodious cadences.

Reproductive imagination was at work, when all the actors from Shakespeare's time, for many years, gave a blood-thirsty image of the Jew, making his one sentence, at the end, (*I am content*) merely the last expression of baffled rage. This was the common type of Jew whom they *thought* they knew and represented. When these words were given by Henry Irving, "*I am content*" became eloquent in its expression of the tragedy of the Jewish nation, when outraged, scorned, loathed, deprived of money, home and all that one holds dear.

Imagination in Thought and Speech.

FROM perceptions based upon objects present to the senses, and from images and abstractions based upon sensory impressions, let us now turn to a province less explored, but which goes hand in hand with the field of mental images already discussed. We refer to imagination, that exploratory, inventive process of the human mind upon which is based all discovery, all progress and all change.

Imagination is at work when the small child begins to manipulate the objects in his environment, to build small towers, construct a toy garage, float a ship, build a sand-house or a snow-fort. He is imitating adult activities largely, but now and then he produces something new or unusual, and often we are not at all sure that he has ever *seen* the thing which he inverts, or that the idea of constructing it has ever been *suggested* to him. This is an example of imagination, of play-acting, or make-believe. A highly imaginative child, if encouraged, will also invent a dream-world, into which he introduces people of his own making, characters that come and go at will, and fit into his infantile environment. Up to a certain point we are highly amused when the child does this, but if he oversteps the realms of probability and becomes too vivid in his enterprises, then we check his imaginative trends and bring him back to reality again.

One child fancies himself to be at times a puppy, again a goat, a sheep, a kitten, or a duck, and during the times when he wishes to represent these animals, he endeavors to engage adults in the dramatizations in which he acts the *leading part*. They must bark, jump, croak, run and perform as bidden. Some children, if

alone, will invent an imaginary playmate, who must be fed and talked to by the adults of the household. Others invent an imaginary brother or sister, whom they "hide" in some far-off corner, and describe to you in vivid detail.

This make-believe world is a *dramatization* of the real world, or of the world as they wish it to be, and the dramatizations, for the child with a lively imagination, are types of *wish-fulfillment*. Such games and make-believe enterprises ought to be encouraged in small children, especially up to the age of seven years, as they are the stuff of which imaginative writers, poets, dramatists, scientists and people with visions are made.

If a child is encouraged to talk, to entertain the adults with his little plays and games, he will become eagerly expressive, and describe to you in glowing tones the enterprise upon which he has embarked. If, on the contrary, you frown upon his childish dreams, his world of make-believe, his air-castles and the stuff of which they are made, you not only turn him away, but you may cramp and distort that eager, imaginative mind which was seeking to unfold itself. Who knows what geniuses have been lost to the world for lack of sympathy, kindly interest and the power to grasp the message which the speaker sought to convey?

Dramatizations, plays and games which encourage the child in expressive activities, whether it be in the back-yard lot, the basement "theatre", or the hastily erected tent, stimulate the child to do his best, to read, sometimes to write, to imitate adult activities and enterprises that are wholly desirable. I have in mind a group of children who lived in a New England mill town, and who sought to entertain the neighbor-

hood by re-enacting such plays as came to the local theatre during the winter months. Uninstructed by adults, these children wrote the parts, rehearsed the lines, and gave neighborhood performances.

One occasion gave them many thrills, though scarcely worthy of the effort: but on the day of the performance, the father of one of the "actors" was much concerned when he saw upon the gate-post the sign "See the Show; *Ten Nights in a Bar-Room. Admission One Cent*". There was no Emma Sheridan Fry in the neighborhood to direct the children's play aright nor was there any Children's Theatre in the city.

If imagination cannot find a safe outlet, it will find an unsafe one. You cannot block the stream of a child's imagination merely by restrictions. On the other hand, much in the realm of imagination and dramatic instinct is lost to adult life by not being stimulated into activity during the early formative years when the child naturally expresses whatever comes to his mind.*

The field of children's dramatics is one of the most fruitful which we can find anywhere for training in manners, in customs, in speech, in bodily movement and in poise, and yet how little is it used! Fairy plays like Cinderella, Ali Baba and the Forty Thieves, The Cat and the Parrot, Little Black Sambo and others find a place in the mind of a child which could be utilized by educators in countless ways. I know of no children who will commit lines more readily and enact scenes more vividly than seventh and eighth grade boys and girls, in junior high school, who for the first time find themselves *able to speak in a language other*

*Piaget. *The Mind and Thought of the Child*. Harcourt, Brace, N. Y., 1926.

than their native tongue. Here is a ready-made method of increasing vocabularies, perfecting diction and pronunciation, aside from the regular grammatic instruction in the class room. Yet how little is it utilized!

In *'op 'o My Thumb* we have the adult who has never realized her childhood dreams and who continues to be infantile in her thinking; yet so tragic and unpleasant is her real world, that she must needs escape into a world of fantasy and unreality in order to endure life at all. Might not community drama offer abundant scope for the "dream-escape" and day-dreams of other working girls if we could offer them an opportunity for such satisfaction, through training the imagination and through community drama?

If, now and then, in this prosaic world, they could find escape into the realm of fancy, through enacting noble parts, instead of merely seeing a favorite movie hero or heroine enact it, might they not catch a vision of high endeavor and lofty purpose which should continue to rescue them from the prosaic realities of every day life?

Imagination and Dramatic Instinct.

IF you still remain unpersuaded of the value of the dramatic element in life, and the utilization of the native tendency to enjoy "make-believe", come with me to the neighborhood of the McKelvy School in Pittsburgh, at the time of one of their frequent performances. Here the actors are boys and girls in costume, arrayed for a performance of *Midsummer Night's Dream*. While the audience rocks with laughter at the stupidity of Bottom and the words of his companions, you will find it is the *more serious parts of the play* which give greatest enjoyment to the actors and to

the audience. These parents may lack the means to surround their offspring with the luxuries and even necessities which you and I hold dear, but they will make almost any sacrifice to give the boy and girl the schooling which they themselves were denied, and in the enacting of a part in a play, or in the reciting of an oration, Abe and Rose find complete satisfaction and the parents find bliss supreme, because with their warm, active imaginations they can catch the vision which the playwright had in mind in preparing the lines, and Abe or Rose responds to the author's suggestion in reading and interpretation of the same. It is the enjoyment of the *imaginative art* itself which gives such satisfaction to all.

All art is emotional, and song and speech are especially so. Sometimes the emotional appeal is not apparent; at other times we laugh because of the incongruous situation which we witness,—or because of a sudden sense of our own superiority, or we laugh at the stupidity of our mistakes lest someone else shall laugh at them; in tragedy we have the fear, sorrow and escape motive; in the pathetic we find an appeal to the grief and despair motives. (10)

By the process of *empathy*, (projection of ourselves into any enterprise)—we enlarge our own personalities, and our mental horizons. Community drama then should be employed because it is a form of *inventive production* of a high order, and renders the workman worthy of his hire. It is the dramatic element in the life of Governor Smith of New York which appealed to so many of his followers and made of him so popular. Hoover's life has been no less dramatic but the contrasts seem less striking and more conventional.

Imagination resembles reasoning, in that both are perceptive, but imagination is less hampered, less bound down, and therefore capable of wider range of movement and application in the realm of expression and dramatic action.

The vividness of a child's imagery directs his sense of appreciation. The higher the intelligence, the less you need to strive to stimulate this application, as a lively imagination and vivid imagery-patterns enable him to grasp in a few words what other children fail to grasp even when the ideas are elaborately embellished. In any audience the speaker must realize that he has before him people with every kind and variety of imagery, and in order to secure the desired effect, he must add additional emotional coloring and warmth to his ideas, in order to *vivify* his message.

It must be borne in mind that words have a *selective* value, and that they are not all equally colorful or intense. We think of verbs as action words,—of nouns as names of objects or qualities,—and it is primarily by the use of *adjectives* that we make *vivid*. Think in turn of these words:—

- (1) automobile.
- (2) automobile passes by.
- (3) a *bright, red, flashing* automobile passes by.

Here, it is the vivifying experience contained in the adjectives *bright, red* and *flashing*, which makes the phrase really *alive*.

The higher the degree of intelligence and the greater the experience, the less effort is required to stimulate the imagination of a given individual. The ability to awaken images seems to vary with races, and the Greeks and Romans were peculiarly expert in

awakening vivid images which stimulated the imagination, by means of language. Under them, perhaps the power of wingéd words reached its zenith, so far as expressiveness of language symbols was concerned. The person with a vivid type of imagery is more liable to transmit to others the vivid coloring of his own mind, through associational values in words.

Exercise I.

Study the following words and place after each the appropriate letter, according to whether it calls to mind an auditory (A), a visual (V), an olfactory (O), a tactual (T), a gustatory (G) or kinaesthetic (muscle-joint-tendon sensation) (K).

red	rainbow	ice-cream	thorn
piano	horse	heavy	fragrant
ball	nail	tired	carnation
drum	lemonade	lame	smooth
strike	sour	rose	cool
scratch			

Exercise II.

Study the following words, looking them up in a dictionary to see whether they are derived from Latin, Greek, Anglo-Saxon, Norman-French, and then try to use them correctly in sentences. Has their vividness anything to do with their inclusion in our language?

montebank	delirium	absurd
courtesy	gazette	devotion
civility	sarcasm	prodigy
sedition	reprobate	speculate
transgress	wassail	villainy

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Chapter IX

INTELLECTUAL ELEMENTS IN SPEECH

Intelligence, Will, Reason and Judgment

IN the previous chapter we discussed thinking in terms of mental images, showing how the mind combines images and ideas into new groups by means of *imagination*. We find that there are great individual differences in the matter of native endowment, so far as types of imagery and imagination are concerned, and that man's instinctive and emotional equipment varies considerably in different individuals.

In the factors of *intelligence, will, reason and judgment* we also find wide individual variations among both men and animals. The animal trainer knows that in the dog world, there are wide variations in intelligence, and he selects very carefully the police dogs to be trained for expert service. Some improve with training, and others do not respond to favorable environment. This leads us to inquire whether intelligence is a native or an acquired factor, and we respond that brightness or intelligence is a native factor, consisting of such qualities as retentive memory, ability to profit by experience, responsiveness, adaptability, persistence, curiosity, problem-solving ability, or the power to make a successful adaptation to a novel situation when first it is presented.

Of course the intelligence of any individual *at a given age*, depends upon what he has previously *acquired in experience*, upon his *environment* and the op-

portunities offered for the *use* of his *native intelligence*, but the general *quality* of his responsiveness and his ability to *use* his mind, in a capable way, depends upon his *native endowment*.

Various tests have been devised, for measuring native ability,* the earliest and best known, being the Intelligence tests devised by Dr. Binet for use in the schools of Paris early in this century. The school authorities were seeking some method of selecting the dull or retarded children, or those who were mentally deficient, so that they might be segregated from the school population at large, and allowed to progress at a slower rate. Incidentally it was discovered that there were some children in the group who could progress much *faster* than the *average* child within the group, and that if attempts were to be made to section children on the basis of ability, probably there should be at least *three* groups,—i. e., those who were *dull-normal* or *retarded* and who could not progress at the *average* rate, a second group representing those who could progress at the *average* rate, and a third group of bright or *superior* children who could progress at a *faster* than *average* rate.

Investigators found that the Intelligence Quotient remained relatively constant,—that is, the dull child became the dull adult; the bright *child became* the *bright adult*, and that rarely did one transcend his natural limitations in the realm of intelligence. It was found that children in the same family, amid the same environment, and given the same education differ in native capacity for learning and in making intelligent

*See L. Terman's *The Measurement of Intelligence*, for tests applicable to mental ages of 3 to 18 years; Houghton-Mifflin Co. 1916. Also see Kuhlman's tests which begin with the 3rd month of life and run to the 18th year, (the age of mental maturity). Warwick & York, 1922.

adaptations. Brothers and sisters in general may test more alike than unrelated children of a community, and twins may resemble each other more than brothers and sisters not twins. That heredity has a direct influence upon the quality of the germ plasm transmitted to offspring is undeniably shown by the researches of Goddard and others who have studied feeble-mindedness. (5)

A similar service has been performed by Dugdale in studying the inheritance of certain criminal tendencies, as illustrated in the family called "The Jukes". (3) Sir Francis Galton, on the other hand, in his studies of men of genius, has shown us the remarkable influence of a long line of favorable ancestral traits. (4) Terman has done the same in his studies of the traits of one thousand gifted children. (12)

That the physical and the mental are closely related cannot be denied, and some recent researches seem to indicate that, given a more favorable environment and improved physical conditions, sometimes there is a noticeable improvement in the mental condition. This has been shown recently by studies made in certain schools for the feeble-minded and in institutions for delinquents, where improvement in the Intelligence Quotient sometimes amounting to several points, followed improved environmental conditions.*

Native inheritance fixes certain *limits* for the attainment of the individual, and as one physician has said "When a child is born, he is done for", indicating that his *native constitution* and *native mental inheritance* cannot be materially altered.

*Report by Dr. Van Uxem, Laurelton State Village, Laurelton, Pa. Pub. by Teachers' College, Columbia Univ., N. Y.

The quality of the mental reactions depends chiefly upon the internal structure of the brain cortex, the way in which the associations are formed between different areas of the brain, the readiness of the nerve cells to respond to incoming stimuli, and the speed with which motor activities are initiated in response to stimuli. Speed, accuracy of performance, skill and precision of movement may *increase with training*, but the *native tendency to perform* depends upon the individual equipment in the matter of intelligence and motor impulsion.

Although intelligence tests are so recent that very few of our great artists have submitted themselves to this form of measurement, and we can only judge in a general way of the native capacities and intellectual endowment of some of the stage-folk of the past, many of them show indications of superior mental endowment. This is manifest in their ability to (1) successfully meet new and novel situations, (2) in their ability to be economically independent, (3) in the artistic excellence of their mental performance as manifested in the creation of some of the great literary and dramatic roles which call for above-average understanding of human nature, (4) in the fact that they have listed themselves in the world's Hall of Fame, through native and acquired creative ability of a high order.

In support of this theory, let us study the words of William Winter, (14) that greatest of all biographers of stage-folk. Discussing Edwin Booth he writes,—“The *actor* is *born*, but the *artist* must be *made*, and the actor who is not an artist only half fulfills his powers. Edwin Booth was both actor and artist. During his first season on the stage he played Cassio in

Othello, Wilford in *The Iron Chest*, and Titus in *The Fall of Tarquin* and he played them all auspiciously well.—Following this he had four years of the most severe training that hardship, discipline, labour, sorrow and stern reality can furnish, when his father left him in California, from which he went to the Sandwich Islands and to Australia (in this school of experience)."

Note also Booth's struggle and victory in overcoming an hereditary craving for drink. Winter writes:—"It seems once to have been thought that the actor who did not often make a maniac of himself with drink could not be possessed of the divine fire. Forrest was the first of the prominent actors to break away from the old usage in this particular. Edwin Booth, who inherited from his father the insanity of intemperance, *conquered that utterly, and nobly and grandly trod it beneath his feet.*" This is an incontestable evidence of intelligence, showing a highly-selective power for making a NEW ADAPTATION and a *choice reaction* of a *high order*, for an actor of his time. (p. 80-81)

Note also the *quality of the characters* which he elected to perform:—(p. 81). "As he matured in his career, through acting every kind of part, from a dandy negro up to Hamlet, he at last made choice of the characters that afforded scope for his powers and his aspirations, and so settled upon a definite, restricted repertory. His *characters were* Hamlet, Macbeth, Lear, Othello, Iago, Richard the Second, Richard the Third, Shylock, Cardinal Woolsey, Benedick, Bertuccio, Petruchio, Richelieu, Lucius Brutus, Ruy Blas and Don Caesar de Bazan. To these he occasionally added Marcus Brutus, Antony, Cassius, Claude Mel-

notte and the Stranger. The range thus indicated is extraordinary; but more extraordinary still was the evenness of the actor's average excellence throughout the breadth of that range."

In describing the acting of Mary Anderson, Winter writes as follows, as if summarizing the factors which make for success in the interpretation of feminine roles on the stage:—(p. 101).

"What are the faculties and attributes essential to great success in acting? A sumptuous and supple figure than can realize the ideals of statuary; a mobile countenance that can strongly and unerringly express the feelings of the heart and the workings of the mind; eyes that can awe with majesty or startle with terror, or thrill with the tenderness of their soul-subduing gaze; a voice, deep, clear, resonant, flexible, that can range over the wide compass of emotion and carry its meaning in varying music to every ear and every heart; *intellect to shape the purposes and control the means of mimetic art; deep knowledge of human nature; delicate intuitions; the skill to listen as well as the art to speak; imagination to grasp the ideal of a character in all its conditions of experience; the instinct of the sculptor to give it form, of the painter to give it color, and of the poet to give it movement; and back of all, the temperament of genius—the genialised nervous system—to impart to the whole artistic structure the thrill of spiritual vitality.* Mary Anderson's acting revealed those faculties and attributes, and those observers who realized the poetic spirit, the moral majesty, and the isolation of mind that she continually suggested, felt that she was an extraordinary woman.—Her affiliations were grandeur, purity and loveliness. An inherent and passionate tendency toward classic

stateliness increased in her more and more. She thought deeply and in mental direction she took the pathway of intellectual power. Though living in the rapid stream of the social world she dwelt aloof from it. Characters of the statuesque order attracted her imagination,—Ion, Galatea, Hermione,—but she did not leave them soulless.”

We have selected only two out of the many whose biographer Winter, represents them as highly intelligent, refined, with mental endowment and spiritual qualities of above average order, and conforming in most particulars to the requirements of superior mental ability.

Among such we find Joseph Jefferson, whose own autobiography best describes his achievements. We have Sir Henry Irving and Ellen Terry, who rendered the Merchant of Venice immortal by their rendition of its lines and the perfection of their stage technique. There is John McCullough whose embodiment of Virginius paid a lasting tribute to the nobility of fatherly love and sacrifice. “McCullough did not present Virginius brushing his hair or paying Virginia’s school-bills; yet he suggested him clearly and beautifully in sweet domestic repose and paternal benignity of his usual life—, making thus a background of loveliness, on which to throw, in lines of living light, the terrible image of his agonizing sacrifice.—It would be impossible to overstate the excellence of all that McCullough did and said in the forum scene—the noble severity of the poise, the grace of the outlines, the heart-rending play of the emotions, the overwhelming delirium of the climax. The actor never for an instant lost his steadfast grasp upon sympathy and inspiration.”

Ada Rehan in *Taming of the Shrew*, and in the parts of *Hippolyta*, and *Rosalind* made clear-cut and distinct each of her personifications. She combined simplicity, unselfishness and patience with impulsive tenderness of heart, and crowned all by speaking the English language with unequalled beauty. These testify to her power to make an intelligent adaptation.

Charlotte Cushman, bereft of health, and unable to act except on occasions when her uncertain condition would permit, made for herself, through reading and impersonations, a name as great in the realm of interpretation as she had enjoyed on the stage,—and therein showed a lively and intelligent use of her powers, together with versatility and originality in their application. She brought her audience to *her*, when she could no longer *go to it*.

Other evidences can be found of the original endowment and native capacities of many of the folk who have been prominent in the theatrical world if you care to study the same in Winter's many biographies of stage folk and in other records of stage annals. We believe that they were *more than ordinarily intelligent* and possessed not only physical but mental characteristics of a high order, and such as make for greatness and genius.

We assume that great acting is something more than mere ability to *imitate*, and we differ from those who claim that it is a mechanical thing, requiring very little intelligence, creative ability or originality in order to excel as an artist upon the stage. We refer of course to real artists, not to those who merely drift into the greenroom.

Will.

EARLY psychology divided the activities of the mind into intellect, feeling and will. With the development of psychology we have found that we cannot separate these three into entities, any more than we can separate body and mind. Will is defined as *wish or desire to do something*; it may refer to *power* coupled with the *will to do*. The word *will* implies *voluntary* action,—but we find that the desire is sometimes an unacknowledged impulsion from the unconscious, and that it leads to *involuntary acts* at times. Out of aimless, searching, purposeless movements in infancy, the child gradually gains control over his muscular system, and from involuntary, purposeless random movements he develops well-defined, coördinated movements with an end in view. One of the first acts of will is that performed when the child begins to hold up its head; next, when the will or desire of the child runs counter to the desires of the adults and he stoutly asserts his own claim and persists in the face of opposition. Will power, as thus manifested, varies greatly in different children. Persistence to the point of unyielding stubbornness is found in some, while others acquiesce readily in the dominance of other children or elders. Somewhere between these extremes is the happy medium,—the child *reasonably suggestible* and yet not giving up *without* reason.

Out of conflict and decision is character born, and it is in the organization of purposes, the harnessing of desires, intents, capabilities and aptitudes that we have the gradual evolution of a personality. Power in overcoming obstacles, resistance to authority, skill in executing one's own plans is an index of strength of

character and determination. For the development of such character, however, *purpose* is first necessary, that one may not drift rudderless too long, and lose the power to *make decisions* or to *act*.

Initiative, originality, ability to get what one wants, and to manage or control other people are also evidences of will-power in action. Correct speech, like other mental performances depends upon the *will* to speak, the desire to attain *power* in speech, and is developed through practise, study of good speech models, the reading of good speech composition and practise both in speaking and in writing.

In the third and fourth chapters we have already discussed the way in which the brain functions in speech. We know that upon the integrity of the frontal lobe of the brain, and the associated areas in the auditory and visual speech areas of the temporal and occipital lobes, depends our power to perceive relationships, to identify facts in experience, power to see, hear, feel and appreciate a wealth of incoming sensations. Closely related to this is the power to *express* that appreciation in words, written or spoken. There are those who can express themselves more easily in writing and others who excel through the medium of articulate speech. The greater the versatility of the individual, the greater his power to express himself in many mediums, and equally well in each. The Greek philosophers were peculiarly gifted in both written and spoken language-conveyance. In the salons of Paris before and during the Revolution, many of the greatest statesmen and philosophers were accustomed to *voice* their sentiments. Heine and his contemporaries in Germany likewise gave *voice* to their sentiments, striving incessantly

santly to overthrow the feudal regime.

In Switzerland the great patriots of that little nation are represented always as eloquent *spokesmen*, great *advocates* of a nation's *rights*. Woodrow Wilson and William Jennings Bryan, in our own time, led by virtue of their ability to *VOICE* the sentiments of a nation and to lead to the realization of those ideals as expressed in *action*. Speech has always and forever been the torch which has lighted the pyre of imagination and exalted it to the skies.

Speech Feeling.

CORRECT speech also depends upon a *feeling* for correct speech, and upon perception of the power and beauty of word-symbols. A little child responds to patterns of rhythm and poetic motion before he understands the *meaning* of the words recited. He responds to the musical intonation of the voice in speech and song and begins to compose his own little songs in the form of incoherent babbling and chanting, even before he begins to talk. This *feeling for beauty and musical appreciation* is found in the street-gamins of Italy amid surroundings which are anything but conducive to aesthetic appreciation and seems to be due to a rich racial heritage of musical appreciation and understanding.

If one is to transmit a message by means of images in their full sensory beauty and perfection, it can best be accomplished through speech which is correct in usage, which does not *offend* the hearer as it strikes the ear, and which blends harmoniously with one's mental patterns, as these are aroused by the speaker's voice and words. William Winter calls the histrionic

art the "carving of images in snow," because seldom are they perpetuated in themselves, but *live* in the minds of the hearers and in the actions and deeds which they call forth.

Compare for instance these phrases, under A and B and decide which represent *art* and which the *common-place*.

A. For my sweet sake, I bid you seek it not!

B. For the love o' Mike, don't do that!

A. The cook prepared an excellent dish for the commandant at mess.

B. The cookee messed about the cook-room slops and got up some dish!

A. The statue was shrouded in mist as in a cloud of glory.

B. I seed her first a-smokin' of a whackin' big cheroot.

A. Trailing clouds of glory do we come, from God who is our home.

B. I'll tell the world there's some class to him.

Expressed in the language of the inarticulate, we have such phrases as those occurring in current literature. In Eugene O'Neill's play *Desire Under the Elms*, we have the oft-recurring expression about the beauty of the sunset and the homely beauties of the farm,— "Purty, ain't it?" and in Edna Ferber's book *So Big* the expression "Cabbages is beautiful!" Nothing *crippled* can have the same power to move and sway, nor can it *create* with the same degree of effectiveness, as can an idea clothed in beauty of phrase, and unhampered by clumsy, cloutish ineffective language. The speaker needs to be a *mental Lindbergh*, who may soar in thought above the mass of humankind, drawing flashes in the mental horizon like the lightnings of the

sword Excalibur, which stimulate the imagination and lead the hearer to a finer understanding or to a nobler seeking after perfection.

A great imagination, employing vivid imagery, and impelled by a great will, has this power, the ability to express itself in words which *reach* and *move* an audience.

Reasoning.

PSYCHOLOGY has shown us that there are qualitative differences in the perceptions, beliefs, judgments and reasoning of different people. Some thoughts, emotions, feelings, and desires are universally experienced, and form the basis for mutual understanding. Other ideas, opinions, prejudices, judgments and beliefs which we hold are not shared by members of another group, or by all the members of our own. If one of the group differs decidedly from the rest, in the matter, say of the interpretation of some visual stimulus, we may say he is suffering from an "hallucination," but if gradually all other members of the group begin to be convinced that he is right in his way of thinking, and the stimulus has caused the same perception to take place in the minds of the others, we are convinced of the *reality* of the thing or object. When we misinterpret the nature of a stimulus and its meaning is not quite clear, we say that one is suffering from an *illusion*, because he did not clearly apprehend the nature of the exciting object.

Perceptions of our relations in space and time, in relation to ourselves and the universe are continually being formed in our minds. If we tend to be highly accurate in our judgments, in sifting data, in forming social judgments and in life relationships, we say that

we are "objective" in our attitudes and in our thinking. If we are inclined to over-rate ourselves, to be over-cautious or suspicious, intensely personal and biased in our opinions, then we are called "subjective" in our thinking. These two mental attitudes are reflected in every individual, but one or the other predominates more or less in each individual. Experience has led us to believe that the objective attitude is more desirable, because it is more impersonal, less subject to errors of "refraction", less prejudiced, and therefore more accurate.

Degrees of Certainty. We express our degrees of certainty in judgment somewhat after this fashion; if we are only *mildly* certain, we may say we "*feel*" the difference to be thus-and-so. If we note rather more of a difference between criteria, we say we "*judge*" them to be thus-and-so. If we note a still greater difference between them, we say we "*believe*" that it is thus-and-so; if we are *quite certain* as to the nature of the difference we say that we "*perceive*" the difference to be so-and-so, and we proceed to give our reason. Qualitative differences in judgment, reasoning and beliefs are expressed in speech, in language which is appropriate to the *quality* of the perception, and one reason for the attainment of a serviceable vocabulary is that it may enable us to differentiate more accurately between different types of experience and relationships. The more *accurately* we can express ourselves, the better we can communicate, the more easily are we understood, and the better able we are to disseminate our thoughts, ideas, ideals and aspirations among our fellow men. The inarticulate, inexpressive thinker, who cannot translate what he *feels* into living *words* is not only at a disadvantage, but his thoughts may re-

main *forever inarticulate* and so be lost to his fellow men. Watson holds that ideas are chiefly important as they appear in *overt action*,—expressed in *speech*, or in *motor activities* to which the ideas naturally lead. A thought or idea which *leads* nowhere, he holds to be relatively unimportant and as if it had never been. (15.)

Definition of Reasoning. Reasoning is defined as the *act or process of using the reason or intellect*; to hold discussion or argument; to *think in logical forms*. To reason, is to explore with the mind, to put together certain images and ideas, to make new combinations of the same, and to employ them for the purpose of conveying those impressions or ideas to another. You call upon the memory to help you to locate certain facts or experiences which you have previously stored away.

While animals learn largely by trial and error in exploration, man shows the ability to solve a problem by observation and insight, even when he has not been previously educated in a certain performance. This ability to grasp, by *insight into* a problem is an essentially human performance. The reasoner must not only *attempt to solve* a problem, and show *understanding or perception* of its nature, but he must be able to *DO* the thing desired, and must *arrive at a solution* of the problem. He does this by *inference*. He has given him two facts and he must find the third fact which is involved in the other two. Where two facts are clearly apparent, in relation to a third, there is no need for inference. One may speak of John and Mary, giving the age of each, and we infer from this that John is older, and we may go on to state how old John will be when he enters college in the fall.

Reason and Logic. Reasoning is required when we

have a *problem to solve*, for which we have *no predetermined solution* or *standard*. Habit and instinct or training and education may *prepare* us to solve the problem, but they cannot *tell* us the answer, off-hand. We must explore and find out the answer for ourselves. Debaters call this process of reasoning "logic". By logic we check the result of our problem and weight it carefully to see if we have solved it correctly. There are two main forms of logic employed. These are called inductive and deductive reasoning.

Inductive Reasoning. Reasoning is the association of images on the basis of other associations already formed. We may use three numerals to express the process of reasoning; I refers to the actual fact or object about which we are forming an inference; II represents all past associations which cluster about I, and III represents the inference or conclusion at which we arrive in solving the problem.

Inductive reasoning is employed when we start with a specific instance or illustration, give several illustrations which come under the same class, and then *induct* our conclusion that such-and-such a general law is derived from the preceding facts. This is arguing *from particular to general*, and is often employed in establishing a point in debate and in the law court.

Deductive Reasoning. In deductive reasoning, we start out with the general theorem, apply it to a particular instance or to several known instances, and then infer that it can be applied successfully to the given case. This is arguing *from general to particular*.

Examples. A. Inductive.

I. This is a crystal.

It has a plane of cleavage.

- II. All the crystals we know have a plane of cleavage.
 III. Therefore all crystals have planes of cleavage.

B. Deductive.

Scarlet fever is a contagious disease.
 This child has scarlet fever.
 Therefore it has a contagious disease.

Inference.

Inference is concerned with drawing conclusions from two given statements or premises. These premises are the two facts which arouse the tendency to *infer* something about them; the third fact or the inference itself is the conclusion, based upon the other two. This form of reasoning is called the syllogism. It consists of the major premise, the minor premise and the conclusion, viz:—

Major premise: All lions are quadrupeds.

Minor premise: This is a lion.

Conclusion: Therefore, it is a quadruped.

Sometimes one premise is suppressed or missing, and a conclusion is drawn with only one premise presented. Thus we say "That is my favorite actor, because he has such fine diction."

Reasoning is a result of the life of the imagination and imagery and depends upon accuracy of social perceptions, human understanding, breadth of experience, ability to perceive relationships, and to argue from analogy, from explanation, from verification of facts, from application of certain observed facts to specific instances, or to argue for self-justification.

Examples. *Self-justification.*

Hotspur's Defense.

My liege, I did deny no prisoners,
 But, I remember when the fight was done,
 When I was dry with rage, and extreme toil,
 There came a certain lord, neat, trimly dress'd,
 He was perfuméd like a milliner;
 He question'd me; among the rest demanded

My prisoners, in your majesty's behalf.
 I then, all smarting, with my wounds being cold,
 Out of my grief and my impatience,
 Answered neglectingly, I know not what:
 And I beseech you, let not his report
 Come current for an accusation,
 Betwixt my love and your high majesty.

Application.

Shylock.

How like a fawning publican he looks!
 I hate him for he is a Christian;
 But more, for that in low simplicity
 He lends out money gratis, and brings down
 The rate of usance here with us in Venice.

Justification.

If I can catch him once upon the hip,
 I will feed fat the ancient grudge I bear him.
 He hates our sacred nation; and he rails,
 Even there where merchants most do congregate,
 On me, my bargains and my well-won thrift,
 Which he calls interest; Cursed be my tribe,
 If I forgive him!

Explanation and Doubt.

At length the sexton, hearing from without
 The tumult of the knocking and the shout,
And thinking thieves were in the house of prayer,
 Came with his lantern, asking "Who is there?"
 Half choked with rage, *King Robert fiercely said,*
"Open! Tis I, the King. Art thou afraid?"
 The frightened sexton, muttering with a curse,
"This is some drunken vagabond, or worse!"
 Turned the great key, and flung the portal wide.

Verification.

Renard.

Have a care!

The Queen still lives, and a Queen's dying arm
 Can strike when others guide. Even now a warrant
Of treason hangs suspended o'er your head.

Elizabeth.

Treason!

Renard.

*Aye, treason. Courtenay is in England—
 Has raised all Suffolk, in your name and his.
 His treason is your treason; the first stroke
 That Courtenay strikes finds echo in the fall
 Of your head on the scaffold!*

Elizabeth.

So be it!

When Courtenay strikes that blow, let my head fall.
 My life upon his loyalty!

Judgment.

JUDGMENT is defined as the pronouncing of an opinion, or decision. It is the power or faculty of judging *wisely*; or showing *good sense*. Psychologists differ widely in attempting to define this process of thought. It has been defined as "the affirmation of a relation", and by the *Gestalt* school of psychology as a mental-pattern or configuration, having a specific "form-quality". We may mention a certain item or quality, compare it with another item or quality, and on the basis of the comparison between the two arrive at a conclusion or inference regarding some relationship based upon the resemblance. Meanings may *exist* only *in nature*, but they are *perceived* by the *mind*, led to *function in thought*, and as a result we *infer*, or *reason*, or *judge* a thing to be true.

Bertrand Russell in *The Analysis of Mind* writes (p. 188) concerning the "object" character of words; "Let us first consider what sort of an object a word

is when considered simply as a physical thing, apart from its meaning. To begin with, there are many instances of a word, namely all the different occasions when it is employed.—It is not something unique and particular, but a set of occurrences.—It has two aspects, according as we regard it from the point of view of the speaker or from that of the hearer." Certainty of belief, reason and judgment varies with the *amount of data in the mind of the speaker*. When words become "*bearers of meanings*" instead of "*representative images*", this seems to indicate a higher stage of mental development than the imaginal, representative stage. This is true when judgment and reason are involved rather than merely perception and intuition.

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Chapter X

INTELLECTUAL ELEMENTS IN SPEECH, (*Continued*)

Memory, Attention, Suggestion, Imitation and Inspiration

Memory, Attention, and Learning.

THE focussing of attention upon a certain field or object of interest is one of the first steps in preparation for learning something about that field or object of interest. It is necessary to *give attention*, willingly or unwillingly to certain stimuli as they present themselves, and to shut out or remain unresponsive to other stimuli. We cannot possibly attend to all stimuli in our environment, at the same time. One set of objects or interests will take the center of the stage and determine the *final common pathway* through which a response is to be made.

Memory is an important factor in the training of an actor or public speaker, and in the preparation of a teacher of speech as in other forms of professional and artistic work. It is important to the speaker because he must frequently repeat verbatim the dramatic or literary productions of the great masters. It is important to the actor as he must react to certain cues word for word and any tendency to *change the words* and to *substitute others* is frowned upon by all stage directors, as it "throws off" the speech of the succeeding speaker.

There are wide differences in memory capacity. Governor Smith of New York is said to have a re-

remarkable memory for names and faces, and for recalling almost verbatim facts which he has once had occasion to read or to write. Among stage folk, Edwin Booth is said to have had such a memory. The wife of a certain college president in the middle west is remarkable for her memory for names and faces, and rarely makes an error on a name with which she has once associated a face.

There are widely advertised systems of memory which claim great powers for their adherents and upon examination we find that they merely utilize certain laws of memory which are known to every psychologist. Usually however, they are unscientifically arranged, and the stress is apt to be in the wrong place. The person would do better to consult a good psychology reference-book and try to apply its teachings, rather than waste time and energy in learning the suggested "system" advertised.

There are four phases of memory generally included in any study of memory processes: these are:—

1. Learning or *setting the thing in mind*.
2. Retention.
3. Recall.
4. Recognition.

Learning. Before we can learn readily and with minimum effort and time, we must learn to *attend*, or to *focus attention* upon the thing desired, to the exclusion of other disturbing elements. While the power of attention is primarily native, we acquire the ability to *direct* attention, by responding to some stimuli and voluntarily shutting out others. This is most important and its control is somewhat dependent upon native factors of attention.

In studying any selection, in committing lines whether in drama or other forms of literature, one must first learn to be *attentive* to the *meaning within* the lines, to know their import, understand them and have a general idea of the theme before committing it to memory.

Experiment with the part-whole and with the whole-part method of learning has shown that it is better economy to study the thing as a whole, over and over again, and then to smooth out the more difficult parts, if necessary, afterwards.

Pyle and Snyder found that in learning 240 lines of a poem, by Whole and by Part methods, the whole method had the advantage both in time devoted to the work, daily, and in number of days required. By the part method, memorizing 30 lines per day and reviewing until the entire poem could be recited, 12 days were required, and a total number of 431 minutes. By the whole method, reading the poem three times per day till it could be recited, 10 days were required and a total of 348 minutes. (2)

Spaced learning was also found to have the advantage over unspaced learning. That is, when an interval is allowed to elapse between learning periods, spaced study sets the ideas in mind more permanently than does "cramming".

Lecturers, college professors, lawyers, judges and others are often required by the nature of their work to reread a paper or article, a brief, or a charge, only once, after have committed their ideas to paper, and must then be able to sweep the page at a glance, and to speak with very little dependance on notes. Lecturers and public readers are often surprised at the skill with which they can do this. They find that when

verbatim repetition is not required, there is less strain and nerve-energy used in speaking, than when they must repeat words verbatim, as the actor must do. Many actors, public readers and speakers will tell you they never feel *sure* of themselves and the *subject* until they have given it *once* before an audience, and that after the "first night" of such a speech, they never have any further fear of speaking upon that subject anywhere, at any time, if given a chance to *recall* the *main points* of the address.

Actors, and public speakers who are accustomed to carefully prepare each speech also confess a great dread for impromptu speaking and some express themselves as absolutely unable to speak extemporaneously upon any subject before a large audience, without previous preparation. Chauncey Depew and Mark Twain were princes of the art of impromptu speech, and were forever trying to outdo each other when they appeared on the same program. It is recorded that Seneca was able to repeat in exact order 2000 disconnected words he had heard once spoken. It is said that Cyrus and Julius Caesar knew the names of every soldier in their respective armies. Themistocles was able to address by name at least 21,000 of the citizens of Athens.

(*Boston Herald, Aug. 2, 1928. P. 14.*)

The memory of the child is operating near to its maximum up to the age of seven, and it is after this period that many speech defects occur and after this period therefore that many of them can best be dealt with. The small child possesses a vivid imagination and power to learn rhythmic patterns, stories and the like, and commits very easily during the years before seven.

Laws of Attention, in Learning.

AMONG the psychological factors in attention which enable us to learn more readily, may be summarized those called the "factors of advantage", namely (1) *CHANGE*: any variation from previously existing stimuli tends to attract attention; (2) *Strength*: that is, intensity such as a *loud* sound, a *striking* color; (3) *Definite form*: Form, tune, rhythm, strongly-outlined stimuli of any type, have the advantage over vaguely defined stimuli; (4) *Repetition*: constant repeating of a stimulus-sound tends after a time to attract the attention. (8)

Billy Sunday frequently uses a *sudden change of voice* to catch the wandering attention of some of his listeners. Bill-boards use glaring colors, striking advertisements, large forms, well-defined outlines in their efforts to rivet the attention of the prospective customer. A child repeats his questions over and over again, with astonishing patience and persistence in the face of parental indifference and impatience.

In order to focus or rivet attention however, it is necessary to have in mind other psychological principles. First, we must remember that of two conflicting stimuli, we have to make a *choice*, and that it is important to choose the most important object of attention, since only one can be properly *attended to*. Second, attention is mobile, shifting, and constantly changing, and the stimulus soon loses its advantage, as other stimuli arrive to take its place, therefore we must *act quickly*.

Retention. Both in learning, in setting in memory and in the ability to *retain* the thing set, it is important to remember that the degree of interest in the thing

learned is significant. If interested, one is more confident of his power to DO the thing required, and more able to observe his own progress toward setting the thing in mind, and so the factor of interest has a highly important *emotional* value to him. The very emotional reaction to the situation is one of the aids in retention.

The factor of *recency* is important in retaining, as a thing once accomplished can be immediately repeated with ease, and once *repeated* it tends to be more *easily* repeated at will; an act *several times* successfully performed tends to become habitual more easily than *once* completed and *not* soon recalled or repeated. This applies to lines committed, to parts taken in plays, to story-telling and lecturing.

The factor of *meaning* is especially important to retention, as seeing the thing in broad relationships, outlining in one's mind as it were, and having a broad understanding of the whole matter, enables one to call up the whole subject more easily, than as though it is only understood in part and in fragments. Thus, *whole* learning is better than *part* learning, in this connection.

Recall. Having tried to set certain facts or data in memory, how shall it be retained in order to be recalled at will?

The method of repetition is the one generally used to enable the individual, by frequently going over the familiar material, to recall it voluntarily when needed. Platform artists frequently go over material from beginning to end, silently, when travelling on the train, when unable to sleep, when going about some mechanical task, with which the repetition does not interfere. They also *rehearse in overt speech*, even when such speech is not accompanied by the gesture or action which accompanies it as given before an audience. This

is useful, provided attention is on the thing said, but mechanical repetition, without thought and attention, may be possible and yet the speaker may be unable to reproduce those ideas accurately when faced with an *audience*. To "think on one's feet" in the presence of such distractions as an audience can offer, is quite another test of memory than the ability to recite by rote certain passages once memorized.

Rhythm and rhyme enable a child to commit to memory certain ideas, more easily than they can commit the same ideas when expressed in prose form. Therefore, we should have a large number of behavior precepts and maxims at hand, in rhythmic form for the child to commit, if we wish him to learn them in the shortest possible time and with economy of effort and strain upon his powers of concentration. In the same way, adults can usually commit poetry to memory more easily than prose. The rhythm and meter sets itself in mind more easily than does prosody. Connected ideas in prose are more easily set and retained than are unconnected disjointed phrases and their recall is easier when they have the characteristic of being logically-arranged and in order.

An aid to recall is the habit of breaking a subject up into its parts, in learning, and asking one's self questions on the subject. These questions, when relevant, help to set in the mind the subject of the lesson or facts read and enable one to reconstruct the thread of the discourse when he desires to recall it.

Recognition. When we wish to recall ideas previously set in memory, how are we certain that we have recalled the *right* set of ideas or precepts? We are not always sure, but we tend to recognize and to "tag" correctly in our minds, objects previously seen, sounds

formerly heard and identified, things touched or experienced. The infant recognizes faces before he can label those faces with the appropriate names. He understands and recognizes the meaning of words, long before he can say them. His vocabulary of understanding far outstrips his vocabulary of speech in the first few years of life. Recognition is often easier than recall in fact.

Experiences may seem familiar and yet we are unable to immediately identify their significance, but eventually this feeling of familiarity enables us to properly "tag" the experience itself. Sometimes we are disturbed with unfamiliar elements in the thing recalled because it does not correspond exactly with the stimulus which aroused the recall process and the recognition. In this case memory is responding to common elements in the two situations, even though the circumstances have changed. This is one of the remarkable things in the memory process.

The freshness of the individual, his freedom from fatigue, illness, worry, anxiety, depression, intoxication, all play an important part in the accuracy of his memories and in its ability to serve him well. According to Freud, we *forget* the things we do not wish to remember. Anxiety and worry may easily blot out memories of importance to the individual. Mental conflicts, complexes and repressions, also, according to the psychologist, are sufficient to cause the memory functions to become impaired. (5)

In the case of psychoneurotic ex-service men, following the world war, the memory functions were found to be impaired in most of the forms of psychoneurosis incident to the strain and stress of warfare. "Shell-shocks" in civilian life, too, affect the memory function,

and impair the mental accumen. During an attack of migraine headache a person frequently finds himself unable to recall proper names. If the attack be severe, other memory functions may suffer and the attack may resemble a mild and temporary form of aphasia. He finds it hard to *think*, to *reason*, to *talk*, to *listen to the speech of others*, or to *understand its meaning*.

The common "aphasia for proper names" is explained by the Freudians as being due to our feelings of self-importance, and the fact that we are injured by any similarity in names, or that we resent admitting that a certain person is more eminent than we.

Memory brings with it obligations, and sometimes the unconscious seems to endeavor to keep us in oblivion so far as recall of certain facts are concerned, lest the awakening cause us *pain*.

The hysterical temperament forgets whatever is embarrassing, easily and conveniently, or whatever wounds the pride, or proves an unpleasant reminder. Hysteria was common at the time of the World War and by its appearance, men were saved from having to incur danger, from going into the trenches, from being wounded, and from staying in the ranks where danger threatened.

In common speech we are subject to "lapses" of memory and frequently may recall the *wrong* thing. Slips of the tongue are common, and we may say just the opposite of what we *intended* to say, when as a matter of fact the thing we *said* was nearer the truth.

Suggestion.

THE psychology of suggestion plays a large part in the success of the speaker in dealing with audiences

and in the acceptance of his message. Many complex factors enter into the relationship existing between speaker and auditor. (3)

The individuals of the crowd may differ widely in interests, pursuits, political beliefs, faith and opinion, so that the sentiment of the individual may be quite unlike the sentiment as expressed in mass action of a large number of such individuals. Scott holds (6) that only as the group or crowd is possessed of some common interest or purpose may the mixed elements of the group be so blended as to produce a *homogeneous* crowd. It is some *common element* or interest, some "community of experience" which draws the crowd together, so that concerted or mass-action is possible. (1)

Given, the crowd, it is necessary to have a central purpose, with a leader, in order to bind the crowd together for the occasion. The effect of the "contagion of crowds", like the "contagion of personality" is, to cause the individual ideas to be lost in the mass-thinking, and to impel the crowd to follow the leader without much question or criticism, provided they are bound together by a common interest in the subject. The crowd is emotional and uncritical as compared with the individual, in its thinking, given to imagery and easily impelled to action by vividness of concrete imagery in the speaker.

Among methods suggested for creating a *crowd* out of an *audience*, Scott (6) suggests that instead of a scattering of individuals seated at random over a large space, they be welded together into a mass by being seated near together and close to the speaker. This helps to create a "crowd contagion". Religious orders recognize the value of ritualistic observance,

for blending an audience into a unified crowd. Singing, and reciting in concert is also a valuable method for blending the individuals into a mass. Another method suggested is to arouse interest and excitement by cheering or applauding the speaker. Schools and colleges have certain hand-claps or plaudits in regular rhythm, which they employ to indicate their approval of the speaker and his place among them, even before he begins to speak.

The most familiar method for the speaker is perhaps that of appealing to common ideas and ideals in his audience and creating enthusiasm and contagion by vivid imagery and appeals to the imagination on some topic of common interest, such as the Referendum and Recall; Equal Pay for Men and Women; Equality of Opportunity; Patriotism; The World War; Cancellation of the War Debt; the Character of Washington; the Wit of Lincoln, and the like.

Scott mentions the part which impassioned speech and imagination play in the speaker's control over his audience and in the responses which he evokes from them. (6) The effect of the stimulus of speech upon an audience is to tend to make the auditor attentive. If the speaker prove uninteresting however, or fails to be *en rapport* with his hearers, they may be lulled into peaceful inattention by the monotony of his voice and by lack of interest in his message.

Any disturbing sound, such as whispering, low voices, laughter, creaking chairs, footsteps and the like disturb both speaker and audience. The opening of doors at the back of the room, invariably causes a large number of the audience to turn in the direction of the sound. It is therefore a good custom to see that all doors are closed at the beginning of a play or ad-

dress, and kept closed, until there is a pause in the speech or in the action of the play. Many a good performance is marred by a failure to understand this bit of crowd-psychology. People who themselves have had experience in speaking before an audience are usually the best listeners, as they are in sympathy with the speaker and tend to keep silent while he has the floor, more than do the ordinary listeners. They understand that social life demands as one of its laws that there be a group leader and that he have the floor, during such time as he is naturally entitled to it.

When the sentiments of the speaker are in line with the mass interests and sympathies the crowd is an aid to the early and striking release of the mass-feeling. The presence of the crowd is stimulating to the individual, whether speaker or listener. Allport (1) holds that "emotional expression" is the stuff out of which stirring speeches are made. Many speakers appeal to the various groups or types of individuals represented in the crowd, in order to insure the proper concerted action or sentiment, and to facilitate the reception of the message.

Woolbert (9) uses the term "polarization" to include the crowd or group under complete control of a speaker. He finds that the prestige of numbers is important. It is also true that the crowd may render the individual more conservative in his thinking than he might be alone, as it is to the thinking of the majority that the crowd yields.

The speaker's prestige has its influence upon the group. His own idea of his own importance may play its part in his management of the crowd. Most speakers endeavor to put the crowd at its ease, to place them in a happy frame of mind, either by some im-

plied compliment to the group or the occasion,—by a humorous sally, by a pleasing introduction of the speaker of the evening or by other socially desirable means. In impelling an audience to action, the speaker also frequently realizes a strong sense of responsibility, knowing that a crowd will act in a way in which individuals could not be impelled to act alone. Every evangelist knows what a part the crowd plays in the psychology of conversion. Every good salesman knows the psychological moment when he can “sell” to the customer. Each realizes the responsibility attached to his position, and all the more is impelled to an earnest consideration of his part in the message to be delivered and his own share in the action which it brings about either in the minds or in the behavior of his audience.

Imitation.

To what extent is the great actor a clever imitator, and nothing more? Must he merely *reproduce artistically* the characters of which he has gained a certain conception? Must he merely *interpret* the idea in the mind of the author who created the character? Probably every great actor and actress has done much more than to portray character with great fidelity to type. In the first place, they must *understand human nature*, and the dull or incompetent man cannot do this; in the second place, not all actors submerge their own personality into that of the part played. Coquelin’s chief criticism of Henry Irving was that the parts always represented Henry Irving, and took on the color of his own personality, rather than that of the type he was supposed to play. On the other hand, Coquelin’s acting was so strongly realistic and his own

personality so "merged" as to be capable of the greatest effects in comedy, but he could never succeed in tragedy, wherein Irving was at his best.

According to William Winter, "It makes no difference whether the actor's feelings are real or unreal, as long as he holds them in perfect control and produces the effect of aroused emotion in others; every actor eventually finds that whatever the range of parts he may acceptably play, he is really limited to three or four characters; and those are in the line of his own most salient and essential attributes." Thus, Coquelin might succeed as *Tartuffe*, but could never be great as *Hamlet*; Irving might make the greatest of *Macbeths*, but he could never succeed as *Cyrano*. Both these actors however possessed ability of a much higher order than that required for mere imitation. Imitation was assisted by imagination, intellect, robust physical constitution, excellence in vocal qualities, poise and power in expression and in the case of Coquelin an aggressive personality which was more than balanced in Irving by a depth of passion, a restraint and control which rendered him incomprehensible to the outspoken Coquelin. (7)

The stimulation of sound causes a child to be alert to certain impressions long before he attempts to reproduce those sounds, but we no longer hold that an "instinct of imitation" is chiefly responsible for speech. It is the *social value* inherent within the speech itself, and what it secures for the individual, which puts a premium upon the child's acquiring speech as early and as rapidly as possible.

While imitation plays a prominent part in acting, the greatest actors have often transcended in reality the greatness suggested by the lines themselves and

have outdone every suggestion given them either by author or stage director. This seems to be accounted for, not on the basis of imitation, but is rather explained, as original and creative ability of a high order and a degree of individuality and power of expression which is a manifestation of genius, rather than mere *fidelity to type*.

How else can we explain the power of a speaker like Jean Jaures in the French Councils? the magnetism of Rabbi Wise, on any subject? the power of Ristori, in Mary Stuart and in Queen Elizabeth? Of Edwin Booth in Hamlet? Of Richard Mansfield's acting in Dr. Jekyll and Mr. Hyde when in a single performance he must represent two utterly contrasted characters?

Inspiration.

NOT mere imitative ability and not mere "dramatic instinct" explains the greatness of some of our renowned actors, public speakers, lecturers and the like. There is a greater power than this, which pervades the work of all these platform artists, and this is best expressed by the term "inspiration". By inspiration we mean the act or power of stimulating the intellect or emotions of others. All true art is said to be inspiring, and if the portrayal of character on the stage is such as to cause others to perceive the beauty of character, loftiness of purpose and nobility of mind of some of the great tragic characters in literature and drama as presented on the stage in the person of the actor, then such a power is not possessed without a considerable degree of intelligence, understanding of human nature, ability to perceive details and intimate relationships between events and incidents, a facile memory, robust

physique, agreeable personality and more than average sympathy, imagination and insight into human relationships and the mysteries of life.

There is a great difference in the way in which those with qualities of leadership *respond* to obstacles and interference. Many blindly yield or become angered at being frequently thwarted, and react blindly without reason and forethought in any situation. Others find a *way out*, and this indicates a problem solving ability which is one of the indications of intelligence. The person who is to become a leader and who wishes to make the best and fullest use of his powers, needs to be a "slave of good habits", habitually, in order that when a crisis arrives he may act wisely and in a socially-acceptable fashion, and that those under his leadership may maintain their confidence in his power and ability as a leader.

The power of inspiring others by his utterances was possessed in a remarkable degree by some of our own continental orators, previous to the Revolutionary War. The inspiration of Lincoln's hurriedly composed Gettysburg address has rendered it immortal in American history. The personalities and utterances of some of our national leaders have been borne out in their writings with fidelity to their spoken ideals and conduct. The speech and gestures of Theodore Roosevelt were inspiring as were his short, terse written utterances. Born an aristocrat and lacking in physical strength in youth, he overcame the inertia to which these might have led, and showed himself a fearless foe of such interests as the Meat Trust,—the unscrupulous politician, and to meanness in whatever guise.

Such a power was possessed by Jacob Riis, who, more by his indomitable energy and courage, rose from

the ranks of the immigrant to a position of dignity and influence in the newspaper world, and to power in social service in America. Booker Washington, rising from slavery to be the prophet of the black race, accomplished much through the inspiration of his written and spoken words.

True inspiration requires more than the power of mimicry and fidelity to fact in representation. The writer recently visited an institution for the feeble-minded, and among the types displayed at the clinic was a girl with unusual powers of mimicry, who found great delight in "preaching", having been much impressed by some camp-meeting which she had at some time attended. Her gestures were emphatic, her vocalization impressive, her desire to deliver a message apparently strong,—but the fact that she could not compose such a message, and that her mind was not equal to the task did not debar her from delivering a long, seemingly impressive and outwardly eloquent sermon, in which the only logical phrases which one could catch now and then were such as these "up in sky",—"in Heav'n", "up there", "goin' to get yer", "be good", "God callin' ", and the deadly seriousness with which she exhorted the audience of some fifty students to "raise yer han's" supposedly in profession of belief, was spoken with such emphatic gestures and appeal, that she actually induced a number of students to respond by raising their hands as she desired. Here was mimicry and the intent to imitate, but the form was that of hollow *semblance* to the thing *imitated*, its *substance* being absent.

To truly inspire, the speaker must identify himself with the ideas and ideals which he wishes to communicate, so that he himself appears to be enveloped and

invested with its magic power. Feeling intensely himself, he may the more easily communicate this feeling to his audience. Dr. Curry calls the attention of the speaker to the difference between Mechanical Imitation and Sympathetic Imitation (p. 221). One he calls external and unfeeling; the other is subjective, personal, and manifests the sympathy and point of view of the speaker. Inspiration, he holds, depends upon *assimilation*, and upon the intellectual power *to grasp* the writer's message, in the interpretation of poetry, of drama or of masterful prose. Imitation is a characteristic of farce, but Dr. Curry held that true art is much greater than imitation. The truly inspiring artist must appeal to the *mind*, rather than to the *sense*; must awaken worthwhile thoughts in the listener; must interpret life for him; must make character *live* in the part he plays; must awaken imagination, passion, sympathy and understanding until the listener, by attempting to identify himself with the message of the speaker, is himself ennobled and made greater, in passing. (4)

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Chapter XI

SOCIAL ASPECTS OF SPEECH AND PERSONALITY

Personality.

WHATEVER one's walk in life, whether thrown into contact with the few or with the many, one is always vitally concerned with forming judgments of personality, character, temperamental traits and similar characteristics of the individuals with whom one is associated in a social, professional or a business way.

The teacher of speech is asked to judge her pupils for debate, for prize speaking contests, for selection of a cast for a play, for class orators, class or group representatives. The student likewise judges the teacher, in electing courses, in order that so far as possible she may meet with sympathetic treatment, understanding and fairness, as well as receive the desired instruction or inspiration and insight into a given subject.

Evaluations of Personality.

SOCIAL evaluation and estimates of personality help us to form more or less adequate judgments concerning individuals with whom we must work or be associated professionally and socially. It is important that we understand human nature, be able to read with a fair degree of accuracy the outstanding characteristics of a personality insofar as these are revealed in daily intercourse. (14)

The Greek philosophers were the first who attempted to classify individuals on the basis of per-

sonality and temperamental traits. They were accustomed to group personality traits under four heads, called "temperaments." These were:—

1. The choleric.
2. The melancholic.
3. The sanguine.
4. The phlegmatic. (18)

As examples of the "choleric" type we might mention certain characters represented in literature, such as Henry the Eighth, Falstaff, Queen Elizabeth; For the melancholic type we have *Hamlet* and Dante; of the sanguine type, Prince Hal (*Henry IV*), Richard Coeur de Lion; Columbus (*The Admiral*; by Kennedy); of the phlegmatic type we have Audrey the shepherdess in *As You Like It*, the rustics in *The Winter's Tale*, and the like.

Various devices have been suggested for the measurement of personality, not all of them safe or scientific in nature. Formerly the phrenologist claimed to be able to read "character" by studying the cranial prominences, ignoring the fact that it is what is contained within the skull rather than what is upon its external surface which determines character, judgment, intelligence, social behavior and personality.

We have only to consider the personality traits of two members of the same household, to discover that there are great individual differences in character, temperament, ideas and ideals and in social behavior of any two members of the same family. Identity of personality is not found even in twins, although they may be more alike than brothers and sisters *not* twins, and than any two members of the human family taken at random and entirely unrelated by ties of blood.

Systems of a popular but unscientific nature have also been devised to enable one to "read character" in the countenance, or graphically "in the hand-writing", or by palmistry, astrology and other methods of "fortune-telling." But we know that adults learn to conceal as well as to reveal their thoughts through facial expression, and that simple pantomimic forms of gesture and action are early overlaid with inhibitions, training and education so that even bodily tensions and posture may be very inexpressive of the true personality and character of the individual. (8)

Because it is true that mind and body work in harmony by an inexorable law of nature, there is some foundation for the belief that we may judge human nature to some extent by obvious signs such as certain *kinds* of gestures, attitudes, postural tensions, expression of the eyes, mobility of the lips, general facial expression and bodily attitudes.

The Influence of the Sub-conscious Mind on Speech and Thot.

LANGUAGE may *conceal* rather than *reveal* the state of mind of the speaker, and we are many of us aware of the way in which slips of the tongue reveal inner thoughts and attitudes which the speaker unintentionally reveals. Sometimes the ideas which dominate the waking hours masquerade through sleep in the form of thinly disguised characters in a dream. That the waking censor is temporarily absent, and that the sub-conscious mind exercises a strong influence over the border-line states when the mind hovers between sleeping and waking is well known. The subconscious mind may even play pranks upon the conscious mind, and

the latter be quite unaware of the humor of the situation or the reason for the "masquerade" in dreams, unless upon awaking he studies his own state of mind previous to the dream and analyzes it in some detail. Many slips of speech, unaccountable prejudices, dislikes, attitudes and inexplicable reactions in a waking state are dramatized in dreams. Freud has discussed this in detail, in *Psychopathology of Every-Day Life*.
(6)

While working upon a rating sheet for this chapter, for instance the writer fell asleep, late in the evening, with the rating still incomplete. On the previous day, she had visited a state penitentiary in company with a group of students and instructors, and had heard a lecture by a psychiatrist on manifestations of criminal tendencies, and on prison psychosis. The writer was suddenly awakened after a sleep of short duration, and recalled dreaming about working upon a rating sheet of personality, the title of which she vividly recalled, and which in her sleeping state had been accepted quite uncritically as a possible title for a rating sheet. In her dream she was unconscious of any *play on words* in the title, and it seemed on awakening as if her subconscious mind were playing pranks at her expense, when she recalled and rewrote the title as it had appeared in her dream. It was "A Rating Sheet for Checking Criminal Tendencies on the Crime Wave", and at the moment of awaking the writer was vainly figuring out sub-headings under this title and endeavoring to work out a numerical rating for the same!

The Ductless Glands and Personality.

THE effect of the glandular secretions upon personality and temperament is admitted by physicians, and although Berman has endeavored to explain a wide range of individual variations in behavior solely on the basis of the functioning of the glands of internal secretion, we must accept his findings with some reservations until more experimental evidence is at hand concerning the manner in which habit systems, early training, environment, acquired and innate characteristics react to check the manifestations of emotions, such as anger, rage, fear, sorrow, grief and the like. We cannot afford to let ourselves accept a mechanistic

explanation of behavior in too literal a sense, despite the evidence of Darrow and others to the contrary, as it leaves too little opportunity for the expression of individuality, progressive development and unfoldment of the personality as a result of habit pattern reactions, environment, training and the like, insofar as these are admitted to modify instinctive and innate characteristics and endowments. (2)

Thorndike holds that the ability possessed by any individual in any given trait is the result of (a) his original nature, (b) the extent to which his original tendencies have matured by inner growth, (c), the circumstances of his life and training. He holds that only as we study the influence of sex, remote ancestry, near ancestry, maturity and environment are we ready to pass judgment upon personality traits in an individual case. (13)

Intelligence and Personality.

IN a correlation of intelligence with certain traits Dickson found an average coefficient of correlation amounting to $+.42$ in a series of 17 traits studied, each trait studied yielding a positive correlation. Sense of humor stood at the head of the list, as correlated with intelligence, with a $+.58$ correlation. The other traits listed in order of amount of correlation were initiative, persistence, will power, conscientiousness, social adaptability, leadership, personal appearance, cheerfulness, physical self-control, courage, dependability, self-expression (in *speech*), popularity among fellows, emotional self-control, unselfishness. (5)

Jung, in his study of Psychological Types, divides personality into main divisions, claiming that all in-

dividuals fall into one of two classes, viz: the extraverts and the introverts and he lists in detail the characteristics of each. Valentine holds that Jung's attempt to thus classify individuals is unsound, in that most of us are located somewhere *between* the two, and that individuals cannot be sharply divided into these two classes. (15)

Vocational Guidance Ratings. Job analysis ratings are being made in various occupations and professions at the present time, and intangible, obscure personality attributes are yielding to scientific study and analysis. It is important that the actor, the public speaker, the boy or girl about to embark upon any public career, in which the use of speech and personality factors are increasingly important, should analyze carefully the factors which make for success in a given job. He must first analyze the job itself, and second his own capacity and ability in relation to it. (11)

He must also study to improve his personality reactions,** his poorly developed traits, and to increase his assets, by learning to curb or control undesirable traits and characteristics, while stressing and unleashing the favorable qualities which will enable him to succeed in a given occupation or profession. (1)

Speech is vitally related to the unfoldment of personality, to expression of the inmost thoughts, desires, wishes, aspirations, ambitions and original ideas and ideals. Without the development of this phase of personality one is attempting to run with one foot, while limping with the other.*

**Bagby, E., *The Psychology of Personality*. Chap. X. *Treatment of Habit Disorders*. Book Exchange, Chapel Hill, N. C., 1927.

*Stinchfield, S. M., *Speech Defects as a Personal Problem*. *Jour. of American Speech*, Dec., 1926. Lincoln, Neb.

Physical Handicaps and Personality.

CONSIDER the speech of the handicapped person. Be it ever so normal the speech of the deaf mute is bound to be colored by his institutional environment, lack of free associations with normal children, and by the very nature of his difficulty, since he has not a normal tone standard for comparison. Expression teachers in schools for the blind find their pupils peculiarly liable to utter flat tones, and to speak with much passivity and lack of animation. Even though there may be more than ordinary animation and life in the tones of an occasional blind or deaf boy or girl, there is always the danger of the personality being colored by the environment, and by the feelings of inferiority to which the handicap gives rise. Few blind or deaf students rise above their handicap sufficiently to render original service and new contributions to their handicapped brothers and sisters. The possession of such a handicap renders the subject unduly introspective, introverted and insecure in the matter of personality traits such as confidence, aggressiveness, knowledge of human nature, freedom from suspicion and a willingness to face the handicap and recognize it for what it is worth. (4)

According to the psychologist, any sense of inferiority, whether well founded or not, in the mental, physical or emotional realm, is bound to affect the personality unfavorably. "Character is what you are", and personality is both what you are and what you think you are.*

Browning's philosophy "What I aspired to be, and was not, comforts me": is poor consolation for

*Roback, A. A., *Psychology of Character*. Harcourt, Brace Co., N. Y., 1927, 595 p.

the unsuccessful business or professional man or woman today. Better modify this philosophy to read "What I aspired to be, and am not, today, I will endeavor to become tomorrow, or find out the extent, scope and importance of my limitations and then compensate for them, by seeking success in some possible way".

Not in the disintegrated, unbalanced neurotic individual do we seek models for success and achievement, although undoubtedly we do find them here at times. (16) Generally speaking, we pin our faith upon the well-balanced, emotionally controlled, socially adjustive personality, with ripened experience and judgment, capable of managing his own affairs and inspiring confidence and a feeling of security in others. Occasionally, here, too, we are mistaken, but we must remember that we seek *after* perfection by devious ways and means, and that no two individuals are identical in experience, in heredity, in environment, in ideas and ideals, at any given time, and this is what renders human nature a fascinating and absorbingly interesting study. (8)

Wells (16) mentions the psychiatric studies made in clinical practise as the most complete and scientific studies of personality now available, grouping under these main headings much of the material given in such personality studies;

- Family History.
- Intellectual life.
- Economic history.
- Social reactions.
- Affective life.
- Unclassified items.

Balancing factors.

Sex life.

The nature of any questionnaire method of course depends upon the purpose for which it is worked out, and varies according to the emphasis, whether for psychiatric examination, for vocational guidance, for selective purposes and sectioning on the basis of ability, and the like.

Methods of Rating. Among methods which have been current, for rating individual performance, are the objective tests represented by the Army Alpha, (10) and Beta Tests, the Terman tests of Intelligence, the Yerkes-Bridges Point Scale tests, the Kuhlmann tests for measuring intelligence, the Pinter-Patterson Performance Test, the latter used especially for the deaf, or when a test is desired which does not include language; the Healy Mare-Foal Picture test and Healy Form Board, the Goddard Form Board, and various others which have been carefully standardized in terms of mental age and from which an Intelligence Quotient can be computed on the basis of performance.

Clark University, under G. Stanley Hall made a great number of studies by means of the questionnaire method, and in the data collected was much valuable material in Child Psychology. This method was found to be open to some inaccuracies; the child was inclined to answer what he thought the teacher wished him to say,—the teacher in her answers did not always have sufficient knowledge of the child's home background, social environment, special interests and aptitudes to make an accurate report and there were other objections to the use of questionnaires as a method of se-

curing important data for tabulation in statistical form.

It was found in working out rating sheets for personality, that the larger the number of judges, the more valuable the information received. In the psychological studies made in the army, in which men received a personality rating, there were usually three judges, such as the psychologist, the army physician and a superior officer all of whom knew the man rated.

Reliability of Ratings. Self-ratings have been found by Terman, Allport and others, to err in certain particulars, as one inclines to overrate himself on some traits and to underrate himself in others, so that any self-rating is found to be more valuable when interpreted in the light of additional information gained by having another person rate the subject, as an outsider will be more objective in his rating than a self-rater can possibly be. (see References 9, 1 and 3)

Allport* found that the more the ratings agree, the greater their accuracy usually, altho judges may be biased. In order to find the extent of the deviations in making such ratings, Hollingworth found the Average Deviation (A. D.) that is, he averaged all the ratings given an individual on a certain personality rating, and found how the ratings on each trait varied, above or below, this average. He found that the ratings varied from 3 to 6 ranks in a group of 25 subjects. (This was in using the ranking method). There was a very small deviation on such points as vulgarity, intelligence, beauty, and conceit; there was a high deviation for snobbishness and refinement. It was found that on any trait where there may be objective checks to aid the observer, as in intelligence and vulgarity,

*Allport, F. H., *Social Psychology*. Houghton Mifflin Co., N. Y., 1924, P. 129.

these are most accurately judged. Those which depend more upon inner and less tangible characteristics such as snobbishness are less accurately rated. Speed of performance, originality, efficiency and social adaptability are quite accurately judged, while more intangible qualities such as disposition, emotional-control, introversion and the like are less reliably rated. These have been reported elsewhere by Norsworthy, Catell, G. W. Allport and F. H. Allport. (1)

A large variety of personality measurements are available for various forms of vocational guidance, and in the discussion of personality factors we shall limit ourselves chiefly to the treatment of personality of the workers in speech, teachers and students, since this is the *'raison d'être'* for this chapter.

Just as in former times, every prominent actor was excused for the tendency to imbibe rather freely, on the basis that it was *neccessary* for his *temperament* and that he might *enter more thoroughly* into the *feeling of the character portrayed*, so in later years we have been accustomed to excuse as *temperament* many actions which are nothing more or less than *displays of temper* and *emotional uncontrol*. On the stage and in platform work of any kind, as in the law court and temple, the man who keeps his temper in hand, and subject to his will, who keeps a cool head and an alert brain, has always the advantage in an argument. In a temper-tantrum, the individual frequently displays emotional fireworks and uncontrol, rather than accomplishes anything of a constructive nature, therefore the cool head and controlled emotion has always the advantage over temper displays and *uncontrol*.

The following personality blank is intended to serve as an outline for a rather intensive *study of the per-*

sonality of the student, and may be used in two ways; (1) as an *outline for the student*, by means of which one may *measure their own personality*, (2) as an *outline for the teacher* who is *directing* the training of the student in *one or more subjects*.

The second personality analysis sheet is for securing a rating rather more rapidly and to obtain one which is more or less objective in that its results may be estimated in numerical terms and compared with a standard.

The teacher who desires to cultivate normal well-balanced personality, which makes for leadership and success in the field of speech attainment should give heed to the development of the following, which may be roughly estimated by the individual himself, or better by an associate who is attempting to advise or direct his educational and professional activities and undertakings. (7)

ANALYSIS I.

A PERSONALITY STUDY FOR WORKERS IN THE FIELD OF SPEECH

Grade yourself by placing a mark at the appropriate place on the line as follows: (Mark may be placed between two degrees of the same, if you are uncertain.)

Example: GENERAL HEALTH

	V.S.	A.A.	Av. +	B.A.	V.P.
	Very super- rior	Above aver- age	Aver- age	Below aver- age	Very poor
I. PSYCHOPHYSICAL FACTORS					
A. <i>General health</i>					
B. <i>Degree of vitality</i> , self-control, and muscle co-ordination					
C. <i>Beauty and attractiveness</i>					
D. <i>Interest and enthusiasm</i> as in sports, recreations, hobbies. (Underline which is meant)					
E. <i>Physical endurance</i> , courage and expression of same					
F. <i>Freedom from mannerisms</i> , eccen- tricities, and "habit tics"					
G. <i>Observance of laws of health and hy- giene</i> as in food, rest, recreation					
H. <i>Muscle-tonus and health</i> as revealed in posture and behavior					
I. <i>Motor skill and mechanical ingenuity</i>					
J. <i>Skill in higher performances</i> , physi- cal and mental					
K. <i>Speed in motor performance</i> and motor learning					
II. MENTAL CHARACTERISTICS					
A. <i>Thinking</i> Originality; creative imagination. Vividness of imagery					
B. <i>Reasoning ability</i> a. simple b. complex (Underline which)					
C. <i>Balance in judgment</i> , perception and common sense					
D. <i>Curiosity</i> a. Manipulation b. Exploration					

	Very super- ior	Above aver- age	Aver- age	Below aver- age	Very poor
c. Research (Underline)					
d. Means taken to gratify curiosity					
E. <i>Memory</i>					
a. <i>Ease and speed</i> in learning					
b. <i>Powers of retention</i> , recall, recog- nition and identification					
F. <i>Intelligence</i>					
a. <i>Ability</i> to meet new and difficult situations					
b. <i>Open mindedness</i>					
c. <i>General information</i> , interests and breadth of horizon					
d. <i>Special abilities</i> (Name field)					
e. <i>Effect of any special disability</i> . . . (Name field)					
f. <i>Hereditary factors and influences</i> .					
g. <i>Acquired factors</i> such as training, environment and their influence					
h. <i>Mental or physical handicaps</i> which affect intellectual sphere					
i. <i>Extent, breadth and range of inter- ests</i>					
j. <i>Originality</i> (or)					
k. <i>Imitateness</i>					
III. PERSONALITY TRAITS					
A. <i>Social-adjustiveness</i> (Underline) with individuals with groups					
B. <i>Balance</i>					
1. Social					
2. Emotional					
3. Mental					
4. Physical					
C. <i>Vocational skill</i> (Mention field)					
D. <i>Avocation or hobby</i> (Mention type)					

	Very super- ior	Above aver- age	Aver- age	Below aver- age	Very poor
E. Cultural attainments					
(Underline) 1. Music					
2. Drama					
3. Literature					
4. Art					
5. Authorship					
6. Oratory					
7. Aesthetics					
F. Breadth of culture					
1. Travel					
2. National and international hori- zon					
3. International understanding and sympathy					
G. Moral horizon					
1. Religious interests and beliefs . . .					
2. Strength of purpose and will . . .					
3. Steadfastness in ideas of right and wrong					
4. Ability to express ideals in action . .					
H. Suggestibility and degree of self as- sertion					
(or) degree of submission					
I. Tenacity in support of ideals, popu- lar or unpopular					
J. Social traits					
a. Sense of humor					
b. Truthfulness					
c. Sensitivity to approval					
d. Leadership					
e. Sociability					
f. Obedience					
g. Sense of fair play					
h. Sympathy					
i. Kindness					
j. Generosity					
k. Selfishness					
IV. PHILOSOPHY OF LIFE					
A. Faith in human beings					

	Very super- ior	Above aver- age	Aver- age	Below aver- age	Very poor
B. Faith in supreme being					
C. Cheerfulness, buoyancy					
D. Optimism—sense of humor					
E. Courage of convictions					
F. Euphoria (sense of well-being)					
G. Freedom from undesirable moods. (marked swings of elation and depression)					
H. Development of inhibitions and self-direction					
I. Prudence and forethought					
J. Freedom from arrogance and cruelty					
K. Freedom from undue pride and con- ceit					
L. Manifestation of parental instincts in the form of tenderness, kindli- ness, forbearance and affection					
M. Altruism; generosity; fairness					
N. Ability to work toward a remote goal					
O. Executive ability, kinetic drive and attainment of definite goals					

A Rating Scale to be used in the Selection of Prospective Students
for Dramatic Work and Speech Training.

Introductory Note:—

This scale is designed to assist teachers in securing suitable pupils for the dramatic clubs of schools and colleges, and to discover those who possess special ability in this field.*

DIRECTIONS:

Consider carefully each item in Parts I to V., giving a score for *every item*, according to the best of your knowledge and ability. If you are not certain, guess. Underline also the answers to questions in Part VI. The totals for Parts I to V. are called "sub-totals". After you have obtained these, find the grand total or Final Score for Parts I to V. grading as follows:—

Very high 4 points
Above average . . 3 "
Average 2 "
Below average . . 1 "
Very poor 0 "

PART ONE. THE MENTAL BACKGROUND

(Grade every item either 4, 3, 2, 1 or 0. If you fail to grade an item, it will be assumed that the score for that item is 0.)

		4	3	2	1	0
A. GENERAL INTELLIGENCE						
1. Knowledge of related subjects in school or college	Grade					
2. Knowledge of national political affairs. . . .						
3. Knowledge of modern literary develop- ments.						
4. Knowledge of general economic conditions						
5. Degree of fondness for reading.						
B. SPECIFIC INTELLIGENCE						
6. Knowledge of all literature that has been taught.						
7. Understanding of important types of litera- ture.						
8. Knowledge of "Old Masters" in drama and work.						
9. Knowledge of modern dramatists and works						
10. Interest in dramatic productions, amateur and professional.						
*11. Ability to grasp meaning upon first reading a selection.						
*12. Ability to express feelings through voice. inflections.						
13. Knowledge of different languages.						

(Record) Sub-Total I here _____

*By L. O. Richards, Pennsylvania State College, 1928, under direction of the author.

PART TWO. THE PHYSICAL BACKGROUND

(Grade each item, else it will be assumed the score is 0.)

	Score	4	3	2	1	0
A. GENERAL PHYSICAL BACKGROUND						
1. General bodily health.....						
2. Amount of physical energy.....						
3. Degree of impressiveness.....						
4. Extent of good habits of health.....						
B. SPECIFIC PHYSICAL BACKGROUND						
5. Possession of correct posture.....						
6. Well poised and socially adjustive.....						
7. Grace and ease in bodily movements....						
8. Expressiveness of bodily movements....						
9. Beauty and mobility of facial expression.						
10. Ability to express emotions and feelings through facial expression.....						
11. Facility and power in pantomimic expres- sion.....						

(Record) Sub-Total II_____

PART THREE. THE SOCIAL BACKGROUND

	Grade	4	3	2	1	0
A. GENERAL SOCIAL BACKGROUND						
1. Fondness for society.....						
2. Popularity with fellow-students and friends						
3. Sympathetic attitude toward society.....						
4. Respect for superiors.....						
5. Just treatment of equals.....						
6. Extent of travel.....						
B. SPECIFIC SOCIAL BACKGROUND						
7. Family status; social and economical.....						
8. Interest in persons connected with dramatic work.....						
9. Variety and quality of social affiliations....						
<i>Underline</i> whether literary, religious, educa- tional, professional, philanthropic, dramatic, or of a business nature.						

(Record) Sub-Total III_____

PART FOUR. THE MORAL BACKGROUND

	Grade	4	3	2	1	0
A. GENERAL MORAL BACKGROUND						
1. Extent of appreciation of the Divine manifestations as in nature						
2. General moral standards of living						
B. SPECIFIC MORAL BACKGROUND						
3. Intensity of connections with religious organizations						
4. Degree of truthfulness						
5. Degree of honesty						
6. Degree of generosity						
7. Degree of unselfishness						
8. Degree of emotional stability						

(Record) Sub-Total IV _____

PART FIVE. ARTISTIC BACKGROUNDS

	Grade	4	3	2	1	0
A. ARTISTIC TEMPERAMENT						
1. Degree of love of beauty						
2. Degree of appreciation of art in music, art, painting, sculpture, and literature						
3. Vividness of imaginative powers and imagery						
4. Degree of perfection in some particular artistic field						
(Name the particular field)						
B. SPEECH ELEMENTS. (Give your subjective judgment on the following vocal attributes)						
1. Vocal quality (resonant, unresonant, nasal)						
2. Time element in speech (slow, fast, moderate)						
3. Volume of tone (loud, soft, medium)						
4. Distinctness of utterance						
5. Diction and rhythm in speech						
6. Facility in expression						

(Record) Sub-Total V _____

Total Score for the five parts,

PART I _____
 PART II _____
 PART III _____
 PART IV _____
 PART V _____

Grand Total Score _____

Part SIX. Note: Underline your *preference* for each of the following statements:—

1. I (do—do not) desire to increase my knowledge of the drama.
2. I (like—do not like) to read plays.
3. I (appreciate—do not appreciate) hearing a good play.
4. I (like—do not like) to read poetry.
5. I will (willingly—unwillingly) participate in plays.
6. I (know—do not know) a great deal concerning dramatics in (school, college).
7. I (do—do not) enjoy good music.
8. I (do—do not like) to do mechanical work such as stage carpentry.
9. A beautiful sunset (does—does not) impress me.
10. I (like—do not like) the average moving picture.
11. I (am—am not) fond of sports.
12. I (like—do not like) to roam in the woods.
13. I (do—do not) have good emotional control.
14. I (would—would not) sooner read than do manual work, about stage.
15. I (understand—do not understand) religion.
16. I (have—have not) taken a prominent part in at least 1 play.

Explanations and Directions.

I. The highest possible score for each part is as follows:—

Part One	Maximum	Score	52
Part Two	"	"	44
Part Three	"	"	36
Part Four	"	"	32
Part Five	"	"	40

204

Maximum Total Score, 204; *Minimum* score 0 to 40.

II. Part Six. These statements will assist the instructor in forming a subjective judgment of the individual.

III. The following ratings may serve as a standard for comparison:—

- A score of 204 to 164 Very high.
- A score of 163 to 123 Above average.
- A score of 122 to 82 Average.
- A score of 81 to 41 Below average.
- A score of 40 to 0 Very poor.

NOTE. In Part One under *Specific Intelligence* subdivisions, 11 and 12, several selected readings from standard literature and drama should be given *by the student*, with *instructor as auditor*.

Additional Suggestions. A series of objective speech measurements

may also be included as a further check on speech ability and to secure scores on numerical basis, for a series of seven tests. These include the team of seven tests standardized by Blanton and Stinchfield, and published by C. H. Stoelting & Co., 424 N. Homan Ave., Chicago, Ill. They furnish material for giving the following team of seven tests, viz: Articulation Test A. (including all the sounds in English), Articulation Test B. (Consonant combinations common to English), Oral Reading Test, Silent Reading Test, Rate in Spontaneous Speech, Percentage of Relevant Words used in Spontaneous Speech and Vocabulary.

A *Specimen Rating Sheet* is given, showing actual rating of a student-applicant for admission to a school of drama. The rating is the student's own. Rating is to be kept on file for reference by later teachers or instructors, and to be filed with *final rating*, after the student's work in the school or department is completed. Such a rating is of assistance in making later reference to the students' capabilities, and of value to the service, in matters of recommendation and the like.

(Sample copy of rating sheet)

A Rating Sheet to be used in the Selection of Prospective Students for Dramatic Work in High School, College or School of Expression.

PART ONE. MENTAL BACKGROUND

(Grade every item either 4, 3, 2, 1, or 0. If you fail to grade any item, it will be assumed that your rating for that item is 0.)

A. GENERAL INTELLIGENCE	Grade	4	3	2	1	0
1. Knowledge of related subjects in school or college			3			
2. Knowledge of national political affairs			3			
3. Knowledge of modern literary developments			3			
4. Knowledge of general economic conditions			3			
5. Degree of fondness for reading	4					
B. SPECIFIC INTELLIGENCE						
6. Knowledge of all literature that has been taught			3			
7. Understanding of important types of literature			3			
8. Knowledge of "Old Masters" in drama and works			3			
9. Knowledge of modern dramatists and works			3			
10. Interest in dramatic productions, amateur and professional			3			
11. Ability to grasp meaning upon first reading a selection			3			
12. Ability to express feelings through voice inflections			3			
13. Knowledge of different languages				2		

(Record) Sub-Total I 39

PART TWO. PHYSICAL BACKGROUND. (Grade each item)

A. GENERAL PHYSICAL BACKGROUND	Grade	4	3	2	1	0
1. General bodily health			3			
2. Amount of physical energy			3			
3. Degree of impressiveness				2		
4. Extent of good habits of health	4					
B. SPECIFIC PHYSICAL BACKGROUND						
5. Possession of correct posture				2		
6. Well-poised and socially adjustive				2		
7. Grace and ease in bodily movements				2		
8. Expressiveness of bodily movements				2		
9. Beauty and mobility of facial expression				2		
10. Ability to express emotions and feelings through facial expression				2		
11. Facility and power in pantomimic expression				2		

(Record) Sub-Total II 26

PART THREE. THE SOCIAL BACKGROUND

A. GENERAL SOCIAL BACKGROUND	Grade	4	3	2	1	0
1. Fondness for society			3			
2. Popularity with fellow-students and friends			3			
3. Sympathetic attitude towards society			3			
4. Respect for superiors			3			
5. Just treatment of equals			3			
6. Extent of travel (Breadth of culture)			3			
B. SPECIFIC SOCIAL BACKGROUND						
7. Family status, social, economical				2		
8. Interest in persons connected with dramatic work			3			
9. Variety and quality of social affiliations				2		

Underline whether *literary*, *religious*, *educational*, *professional*, *philanthropic*, *dramatic* or of a business nature

(Record) Sub-Total III 25

PART FOUR. THE MORAL BACKGROUND

	Grade	4	3	2	1	0
A. GENERAL MORAL BACKGROUND						
1. Extent of appreciation of the Divine manifestations as in nature			3			
2. General moral standards of living	4					
B. SPECIFIC MORAL BACKGROUND						
3. Intensity of connections with religious organizations				2		
4. Degree of truthfulness			3			
5. Degree of honesty			3			
6. Degree of generosity			3			
7. Degree of unselfishness			3			
8. Degree of emotional stability	4					

(Record) Sub-Total IV 25

PART FIVE. ARTISTIC BACKGROUNDS

		Grade	4	3	2	1	0
A. ARTISTIC TEMPERAMENT							
1. Degree of love of beauty			4				
2. Degree of appreciation of art in music, art, painting, sculpture and literature			4				
3. Vividness of imaginative powers and imagery				3			
4. Degree of perfection in some particular artistic field						2	
Name the particular field							
B. SPEECH ELEMENTS (Give subjective estimate on following vocal characteristics.)							
1. Vocal quality (resonant, unresonant, nasal)				3			
2. Time element in speech (slow, fast, medium)				2			
3. Volume of tone (loud, soft, medium)				3			
4. Distinctness of utterance				3			
5. Diction and rhythm in speech				3			
6. Facility in expression					2		

(Record) Sub-Total V 29

Total Score for all parts.

Part I 39 _____

Students' Own Rating

Part II 26 _____

Part III 25 _____

Part IV 25 _____

Part V 29 _____

Grand Total Score 144 _____

Students' Own Score _____

*Personality Studies.**Study I. Charlotte Cushman.**A. Mental Background.*

The mental background of Charlotte Cushman was one which made for force of character, combining a keen grasp of state and national affairs, knowledge of literary achievements of her time, and of general economic conditions in the world of her day, good intelligence and training, as a member of an old New England family. One of her ancestors was a minister who came over on the Mayflower, and who settled in the colonies with the Pilgrim fathers. The straightened circumstances of the family, following the death of her father, a Boston merchant, was the immediate cause of her seeking a public career. Her voice early attracted attention and as a result of her performance in a local concert, a patroness educated her in music.

As a result she became a linguist of no mean ability, and as a result of her training for the stage, followed this career for forty years. A handicap was no bar to her success, as upon the loss of her singing voice she continued perfecting her act in acting, and with the performance of Lady Macbeth began her stage career.

B. Physical Background.

Her health, though not robust, was subjected to severe strain, as a result of indomitable spirit, extensive travel, strenuous work in rehearsal and performance in America and in Europe. In middle life the disease which eventually ended her life, appeared, serving as a check upon her activities. In spite of this however,

she continued her public reading and kept up her active dramatic work on the platform, through dramatic readings, when forced to give up her stage work. (Here again we find an indomitable spirit conquering a great obstacle.) Her impressiveness on the stage is perhaps best known in her performance of Meg Merrilies. That she was well-poised and socially adjustive is evident from the fact that when in Rome she established about herself a charming circle of literary and artistic persons and that her home remained an artistic center, so long as she was in Rome. Her character blended simplicity, energy, force, personal magnetism, humor and vivid imagination in one personality. She possessed a noble countenance, touched with sadness, and carried herself with majesty. Though racked with pain, after cancer had attacked her system, she did not complain and was sustained by deep religious faith. In the words of William Winter, "To the last she was an image of majesty; she had led a good life; she felt upon her gray hair the spotless crown of honor, and she met death as she had met life,—a victor; and she passed from the world with all the radiance of glory about her.

C. Artistic Background.

What finer social, moral and artistic background could one desire for a great artist that this? Not perfection, but the striving after it, in body and mind, enabled her to realize greatness of mind, despite a body racked by suffering. Into her acting she poured great resources of character, intellect, moral idealism, inspiration and personal magnetism "which marked her as a genius of the first order". Winter, Pp. 119-131. (19)

Her artistic nature was one which could embody keen love of beauty, fidelity to art in portrayal, a satisfying sense of completeness in characters portrayed, strong emotional power and range and vivid imagery. Her voice could be soft, sweet, gentle, mellow or deep, expressive and pathetic or eloquent with fine dramatic power. Her delivery embodied the highest ideals of majesty, pathos and dramatic power.

Study II. Jean Jaurès.

A. Mental Background.

Jean Jaurès, sometimes called the greatest orator of his day, stands out in vivid lineaments against the background of socialism. Anatole France in describing his precocity in the use of language, thus describes an early incident in his life. "The young prefect of Southern France was making the first official tour. At the court of the College of Castres a young speaker stepped forth from the ranks of the students, to deliver the usual welcome to the representative of the Republic. He was a sturdy, stocky, dashing blond lad, in rustic garb, with uncouth gestures and unpolished accent. For a moment the keen eyes of the polished official but half concealed a flash of amusement at the clumsiness of this rustic orator. But when their eyes met, the prefect's glance changed to one of sudden interest and he listened to the address with delighted attention. Later he alluded to the excellence of the address in talking with the teachers, and personally complimented the orator, whom he later often applauded in the Chamber of Deputies."*

His knowledge of political and local history and current topics is evident from the fact that at 15 he

*Jean Jaures; by Anatole France. *Living Age*. July 21, 1923, P. 103.

loved to harangue his fellow-citizens and to explain to them the local issues of their little town of Castres. That he was a plodder too, is known and he graduated from the Ecole Normale at the head of his class. We then hear of him in Parliament, enlivening every important debate with flashes of wit and vivid imagery which drew fire from his opponents, at the same time answering them in Chesterfieldian style. He was said to *make history*, in a sense, wherever he went. He was not a mere orator in the popular sense; he was an artist of speech; he also possessed a highly contagious personality. Out of a vast vocabulary he knew how and when to seize upon the right word, and to utter it in a true Jaurès-voice and typical gesture. He came not entirely naturally by these gifts, as we learn that he spent seven years in the study of elocution before he ventured to make a speech before an audience. His great verbiage does not detract from the quality of his message. He not only studied elocution with care, but "forgot not a single lesson", though his art was concealed by the amazing power of a giant personality.

B. Physical Background.

Jaurès, too, like Cushman, had a physical handicap to work against. Though his was not an infirmity, it was rather a peculiarity. So peculiar were his features and the lines of his physiognomy that it was said no cartoonist in France could do him justice. He possessed indomitable energy and great physical and moral courage. He was not afraid to be champion of an unpopular cause, as is evident from the fact that he chose to differ from the great Clemenceau, his old friend, and that he chose an unpopular side of the

question at the time when European affairs were rapidly rushing toward the World War.

As an example of the force and vividness of his imagery, let us read the lines he uttered in Brussels four days before the outbreak of the World War. He said: "Attila is on the brink of the abyss but his horse still stumbles and hesitates. If appeal is made to a secret treaty with Russia, we shall appeal from it to the public treaty with Humanity. At the beginning of the war everybody will be hurried away. But when consequences and disasters unfold, the peoples will say to those who are responsible, "Get you gone! and God pardon you!"

Nation. Dec. 16, 1915, P. 718.

His sympathies were with the Socialist group in French politics and that he became a power there is evident not only from his reputation as a speaker, but from the fact that he was elected vice-president of the Chamber, before his break with Clemenceau, and made of the Socialistic party of France a power to be reckoned with, in state and national affairs.

Andre Tridon writes of him at this time, "A Jaurès afternoon at the Palais Bourbon was not unlike a Caruso evening at the Opera. Whether they had come to admire or to damn, all applauded; he did it so well, almost too well, to appear absolutely sincere. Yet he was sincerity itself. His marvellous pyrotechnic displays were not tainted with mountebankism; his eloquence was almost a reflex. Jaurès could not help being eloquent."

Nation, Vol. 99, Aug. 6, 1914, P. 162.

He was an artist in public life, a giant in intellect and emotion and in the capacity to convey his ideals and ideas to others in living words and in vivid images

which flashed upon his listeners with tremendous force and conviction, and, communicated itself to them through the contagion of personality.

"His was the contagious temperament and his audiences likewise wept or laughed in unison. He played on a harp of a thousand strings and is said to have been as fascinating a spectacle as the elder Coquelin. Figaro declared he was a true "romantic" and natural comedian who had missed his vocation."

Review of Reviews, Vol. 50, Sept., 1914, P. 361.

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Chapter XII

SPEECH MEASUREMENT

MENTAL measurements began to arouse interest in this country about 1890. Kraepelin's work in Germany on methods of diagnosis for use with insane and mentally abnormal patients gave a great impetus to it. Binet's work in the schools of Paris, about 1905-08 furnished a basis for segregating mentally deficient children. Further research in individual and social psychology has made possible the development of a wide range of psychological measurements, such as trade tests, tests of the emotional life, measures of general intelligence. Special abilities and disabilities have been given attention only within the last part of the first quarter of this century. Methods of diagnosis in reading, writing, spelling and arithmetic are in use in many schools of today.

The development of a special technique for testing the speech of school children is relatively new. Alice Descoedres of Geneva (8) made one of the early attempts in this field, trying to find a form for children of each age level. Hers were entirely tests of intelligence. She found an important social difference in the language development of children in uneducated classes as compared with children of the educated classes. From the standpoint of intelligence findings, her tests are important, but they give no standards or guidance for determining the nature of the speech handicap, such as stuttering, oral inaccuracies, lisping, or letter substitution.

Speech surveys have been given in several large

cities of the United States, but on the whole, very little practical help has been derived from them, as differences in method and procedure render them difficult to compare. In order to aid in the diagnosis of speech disturbances and to assist in their gradual elimination, a standardized speech test or series of graded tests seemed essential. A properly graded scale could be used by teachers of speech and diagnosticians generally. The Blanton-Stinchfield Speech Measurements (3) were therefore undertaken at the University of Wisconsin, to provide a practical means of measuring speech in a convenient and reasonably rapid manner.

Miss Descoeudres chose nine tests as a measure of the power of speech. (8)

1. Naming opposites in pictures and objects shown.
2. Filling in missing words in ten easy omissions.
3. Repetition of numbers pronounced to child.
4. Naming six callings in response to such questions as, "who makes shoes?"
5. Naming six materials such as, "what are pencils made of."
6. Naming eight opposites from memory. "If your meat is not warm then it is.?"
7. Naming ten colors.
8. Finding twelve verbs, representing actions performed by the examiner or in which the child imitates action.
9. Giving a list of twenty-five words of increasing difficulty and finding out by question whether or not the child knows the meanings of the words.

To solve the exercises would require 103 correct answers.

The author gives norms based upon the study of some 300 Geneva children ranging in age from two and a half to seven years, from families of both working classes and educated classes.

When once the speech defect has been diagnosed, it

is possible to apply corrective measures, to graph the results from week to week, and to stimulate the child to improve his own record. There was also a need of a series of measurements for testing the child who could not read, the blind, the mentally defective and the deaf child. A picture test was first devised, covering some 100 English sounds, giving each consonant sound in initial, middle and final position. Later an object test was devised, the materials selected representing all the consonant and vowel sounds as listed in the International Phonetic Association alphabet.

The picture charts and the object test can be used with children who cannot read and are so arranged as to elicit the proper responses in the forms of names of familiar objects. They are therefore useful with the normal pre-school and the kindergarten child. Probably it is unwise to use a test involving reading in grades below the fourth. It was found that among first, second and third grade children in the Madison Public Schools, (Wisconsin), about 75% of the children tested made a satisfactory score when the picture-articulation test was used. The use of articulation tests in sentence form is therefore not advised below the fourth grade and the graded tests were arranged with this in mind.

The tests were undertaken not merely to enable the examiner to detect the type of speech defect, but to enable her to make a personality rating as well. After trying out a large number of tests such as substitution tests, memory for digits, word memory, language scales of various types, reading and vocabulary tests, a team of seven tests was chosen for standardization from those who gave the highest correlation coefficients, when compared with a standard.

The Blanton-Stinchfield (3) Speech Measurements are arranged in two parts. Part I. is subjective and provides for personality ratings, off-hand estimates by the examiner of the child's vocal quality, pitch, time elements (if fast or slow), enunciation, behavior characteristics, special handicaps or special abilities.

It includes a seven-point scale, each characteristic being rated on a basis of 1 to 3, (poor, average, superior). This gives a maximum rating of 21 points, a minimum of 7 points for a normal child and a possible zero for mentally deficient children.

The subjective judgment, when correlated with definite objective measurements such as oral reading, silent reading, vocabulary and spontaneous speech shows sufficiently high coefficients of correlation to warrant the inclusion in a series of objective measurements, of those tests which seem to be important in speech diagnosis.

Part II consists of a series of objective measurements, in a team of seven tests. (1) Articulation Test A, (containing all the sounds in English arranged in initial, middle, final position for consonants, and including also the word sounds) (2) Articulation Test B, (containing many of the commoner consonant combinations), (3) Oral Reading Rate, (4) Silent Reading Rate, (5) Spontaneous Speech Rate, (6) Percentage of Relevant Words used in Spontaneous Speech, and (7) Vocabulary.

The tests were given to all the children in each of eight grades in the Madison, Wisconsin public schools, to 150 University students at the University of Wisconsin, and to unselected groups of children in Chicopee and Springfield, Massachusetts. The adult (col-

lege level) test has been given to 1648 Freshman girls at Mount Holyoke College in 1922-27. The general value of the test is strikingly indicated by the fact that although 60-67% passed the test each year for 4 years, so that they were placed in the regular speech classes or in the excused group, one sixth failed to pass the test and one sixth were rated as belonging to the *superior group*. This gives a good curve of distribution, when compared with various psychological ratings of other types.

The tests show that a number of college girls held for speech training made low scores in oral and silent reading rate. Adults usually read silently at the rate of about four words per second. These tests show that the college girl reads slightly faster, or at a rate of between 4.9 words per second and 5.3 words per second, this being the median for the entire Freshman classes of 1919 and 1920.

The following table shows the average of *class medians* for four years, 1922-25 in the various tests, the testing material being that arranged for college students (4).

Medians.

Articulation test, A, 97 sounds in 100 correct.

Oral Reading rate, 170-190 words per minute.

Silent Reading rate, 220-300 words per minute.

Vocabulary, 75 words (in 100) defined. (Whipple Vocabulary test.)

Spontaneous speech rate, 120-140 words per minute.

Percentage of relevant words, 96%.

Table III shows the standing of 41 students in the special corrective group when compared with 41 unselected students from the superior speech group, on the basis of the tests given in the fall of 1926.

Table III.

Rating in Speech Measurements and in tests for Musical Talent.

No. of students, Corrective group 41

No. of students, Superior group, 41, Total 82

Median Scores.

	Special Group	Superior Group
Speech index in subjective measurements,	14	17
Speech index in objective measurements,	13	15
Articulation Test A	93	97
Articulation Test B	93	98
Oral Reading (Wds. per minute)	184	180
Silent Reading (Wds. per minute)	274	294
Spontaneous Speech Rate	120	132
Percent. relevant words in spont. sp.	95%	96%
Vocabulary	74	72
Median average	106.6	111.0
Scores on Seashore Musical Tests.*	C—	C

SUMMARY.

(College girls.)

1. The off-hand estimate of the speech performance of the girl free from speech handicap is higher than the estimate made of the girl who is placed in the speech correction group.

2. The objective performance of the superior speech group is higher than that of the special corrective group in such performances as in Articulation, in Silent and Oral Reading Rate, and in percentage of Relevant Words used in Spontaneous Speech.

3. Sense of pitch, sense of intensity and tonal memory as

*The highest score made by any student in either group on the Musical Tests was B, altho some higher scores were made in the class as a whole.

Norms for the series of graded speech tests have been published elsewhere. See Speech Measurements, Manual, Blanton-Stinchfield; C. H. Stoelting Co., 424 No. Homan Ave., Chicago, Illinois,

shown by the Seashore Musical Ability Tests, enter into the function of speech. The score for the corrective group is lower than that for the superior group. These factors should therefore be considered in applying remedial speech measures.

4. The findings indicate that speech, intelligence, scholarship, auditory discrimination, and personality factors may be related, but they are not necessarily in a "causal sequence". On the whole, the person of higher intelligence seems more stable emotionally and makes a better adjustment in college life than does the less intelligent student.

5. The scholastic attainment of the special group is inferior to that of the superior speech group at the time of entrance to college. The scholastic attainment of the special corrective group remains inferior to that of the superior speech group at the end of the first year of college life.

6. On the basis of general intelligence, whatever it may include, the two groups are about equal as shown by the Scholastic Aptitude Tests and other intelligence tests given for the past five years to all entering students.

7. There is very little difference in the two groups on the basis of reports sent to the college by parents, principals and others at the time when application to college is made. After college entrance however, the students in the corrective group are found to be less easily adjusted than are the superior students. They are also more subject to personality disturbances, low scholarship, and other forms of maladjustment than are the girls classified in the superior speech group.

8. A larger number of girls in the special corrective group come from public schools than from private schools. The girls from private schools seem to pass the tests more easily. This indicates that private schools place a greater emphasis upon such factors as personality development, clearness of thought and expression. These girls from private schools perhaps come from homes where more emphasis is placed upon personality, speech, posture, and expressional activities generally. Miss Descoeudres in Germany found a similar difference between

two classes of children ranging in age from two and a half years to seven and a half years in tests involving "power of speech," and representing children from parents of the laboring class and children of educated parents.

9. A study of official records in the Department of Physical Education, Dean's Office, Board of Admissions and Department of Health shows that there is little difference in the physical comparison of the two groups. Both seem to be in equally good physical condition at time of college entrance. The special group shows a somewhat greater tendency to certain respiratory diseases such as frequent colds, influenza and tonsilitis, while a larger number in the superior group have had tonsils and adenoids removed. This seems to indicate a better mouth, nose and throat hygiene on the part of girls in the superior group. Both groups show an equal amount of susceptibility to the common diseases of childhood, according to past medical records. There is nothing on record in any instance at the time of college entrance in regard to speech or personality peculiarities among the girls examined for the past five years. Families and principals have ignored these peculiarities even when they should have been recognized as hindering a girl in making her economic and social adjustments in later life. Provision for notations in regard to speech and personality should be included as a part of the college entrance blanks, if students are to receive special attention in helping them to eliminate the difficulty during college years. Neglected, it may be in a large measure responsible for economic and social maladjustments at various points in one's career.

Table IV.

Distribution table showing results of speech tests both at Perkins Institution, Watertown, Mass. and at Pennsylvania Institution for the Instruction of the Blind, Overbrook, Pa. 1924-26.

	Upper School		Kinder- garten		Lower School		Total Cases
	Girls	Boys	Girls	Boys	Girls	Boys	
Vocal defect; harsh, etc.	6	7		2	4		19
Vocal defect; hoarse.	1	1					2
Stutter, hesitation.	1	3	3	3		1	11
Letter substitution, with or without lisp.	2	4	8	9	4	2	29
Nasality.	3						3
Oral inaccuracy and letter substitu- tion.	11	5	5	2	5	2	30
Jaw tension while speaking.	3	2					5
Mild oral inaccuracy.	11	9	5	6	10	7	46
Foreign accent.	1	1	1				3
Oral inaccuracy and lisp.	12	3	5	1	1	1	23
Deafness with oral inaccuracy.	2	1	1			1	5
Lateral lisp.					1		1
Cleft palate speech.		1					1
Breathy quality or poor vocal quality					2		2
Emotional uncontrol.					1	1	2
Nervousness, personality difficulty or psychotic tendency.	6	4					10
Dementia Praecox quality of voice. .			2				2
Negatively suggestible personality. .	1						1
Monotonous, repressed, subdued tones.		1					1
Aphasia.						1	1
Paraphasia.						1	1
Introvert, shut-in type (noticeably so)	1						1
Totals with speech defects.	61	42	30	23	28	17	201
Girls, 119							
Boys, 82							

SUMMARY.

Total numbers examined.

Upper school Girls 135, Boys 93

Kindergarten Girls 49, Boys 55

Lower School Girls 30, Boys 42

Total number examined 404

In the speech defect group there were, Boys 41%, Girls 59%, a total of 201 cases. 49% of the total number examined had speech difficulties ranging from mild letter substitutions and inaccuracies to stuttering, lisping, etc. The ratio of speech defects in the public school population is given by Wallin and others as 3 boys to 1 girl. It is interesting to note that in the schools for the blind, we find a larger number of

girls having speech defects, the ratio being 3 girls to 2 boys.

In the elementary schools of Madison, Wisconsin for eight grades and university students tested, the percentage of speech defects, ranging from mild to severe was found to be 18% of the total number tested. It will be seen that the percentage in schools for the blind, is much larger. Among the significant tendencies found in the schools for the blind, were the following:

- I. Large number of letter substitution cases, 29 or 14%.
Commonest among kindergarten children.
- II. Mild oral inaccuracy and lisping, 23 or 11%.
Commonest among upper school girls.
- III. Stutter or hesitant speech; broken rhythm, etc. 11 or 5%.
Most common in the kindergarten.

MASTERING the technique of various related speech activities through the audito-visual, audito-motor and visuo-motor associations is a much more complicated process than is generally recognized, because we take so much for granted in regard to the learning process, that we fail to realize what a task faces the infant of today in acquiring a vocabulary. Primitive man might remain content with the development of a sign language, gestures and depictive forms of expression, but modern children if they are to compete successfully with other children in the environment must acquire during the first six years the ability to read, to write, to make themselves understood, to memorize a vast number of names of objects, to form associations for an immense number of objects, persons and things, and learn to articulate the names of these social "implements."

The aim of the acquisition of language is to perfect the process of communication through oral and

written speech. From the standpoint of pedagogy, language study covers many activities; reading, silent and oral, spelling, writing, grammar and speech composition, written composition, and various forms of literary and artistic production.

It is surprising to many people to learn that there are a good many children of pre-school age who fail in this socialization process and some who do not learn to read during the entire first year in school. There are others whose speech becomes so conditioned by fear that they break down into habits of stuttering, or speak in jerky, unrhythmic sentences. They may fail to overcome these habits just as they fail to overcome other types of handicaps unless remedial measures are applied. A surprising number of school children lisp. A small number stutter. Various investigators have found that the incidence of speech defects when boys and girls are compared, is in the ratio of three boys to one girl. It is generally agreed that at the outset girls are rather more facile than boys in the mastering of language. It is often quite impossible to eradicate inaccuracies of speech found in adult life. It is comparatively easy to remedy them if recognized and dealt with in the early formative years in school and home.

Diagnostic language scales in use in public schools show that whatever the language ability measured, it increases with age and grade. How much is due to training and how much to native ability, linguistic skill and environment, it is difficult to say. Trabue found a .83 coefficient of correlation between the Binet Test mental age scale and his own language scale. The Army Alpha test shows a correlation of +.70 between intelligence grades and English. In the matter of

speech composition, training in grammatical construction, syntax, punctuation, spelling and the like, proficiency seems to be more a matter of habit, due to training and usage, than a native ability. We know that drill and intensive training often overcome defects and deficiencies in handicapped children. On the other hand, some children who are specially gifted in certain fields may be seriously handicapped by the lack of early training in spelling, punctuation, reading and writing.*

The superiority of girls over boys in language ability is evident also from the language scales, as it has been shown that girls write longer and better compositions than do boys. Speech surveys show that girls have fewer speech handicaps, and that generally they are slightly more precocious in language development than are boys.

The same principles which apply to the improvement of oral and written language apply to the elimination of speech defects. Here we have one of the most recent developments in the field of special subjects. In the up-to-date school today there is some provision for every handicapped child, whether due to defective vision, defective hearing, or because he is crippled. Special classes for mentally deficient children are a part of many school systems and we have even established classes for the precocious child, that he may not be held to the average attainment of the majority of the children of his age level. It is in the newer realm of special handicaps involving speech disability that greater attention must be given by educators to drill and special classes. Speech correction is included

*Reed. *The Psychology of Elementary School Subjects*. Ginn & Co., Boston, 1927, Pp. 273-283.

in the curricula of schools in some cities such as Detroit, where at least thirty-two teachers of the subject are employed, with centers in all of the larger school districts. Boston, Madison (Wisconsin), Los Angeles, San Francisco, New York, Philadelphia, St. Louis, Pittsburgh, Harrisburg, Grand Rapids, and Minneapolis give attention to this work through the establishment of a special department or by special teachers exclusively engaged in speech correction work.

In a speech survey made in St. Louis in 1915-16 including 98,057 children, it was found that 2.8% were speech defectives.*

Conradi (10) made a school survey in 1904 in several American cities including 87,440 children, and found that 2.46% were speech defect cases. Dr. Smiley Blanton in a survey of Madison Schools including 8,000 cases in seventeen schools found the incidence of speech defects to be 5.6%. Miss Pauline Camp found 13% in the schools of Grand Rapids. She attributes this larger number to the fact that she personally examined each child included in the survey, whereas most of the surveys previously made had been based upon questionnaire methods and reports made by teachers untrained in the field of speech defects.

In 1922 the writer, giving speech tests to all children in each of eight grades in the Madison, Wisconsin public schools found 18% having speech difficulties ranging from relatively mild to severe. In six years of speech testing at Mount Holyoke College, including all the entering students in classes from the fall of 1922 to 1927 an average of 16% of the class each year has been classified in the speech correction group because of difficulties from mild to severe.

*Report of Board of Education, St. Louis, Mo., J. E. Wallin.

Grouping by means of the Speech Tests at Mount Holyoke College, for four years (1922-25) on the old basis and 1926-27 on new basis.

Total number 1678.

TABLE I.

Showing percent of students in each speech group,

Group.	Years 1922-25, when some students were excused.				Total, 1922-25.
	1922	1923	1924	1925	
I.	18%	16%	16%	16%	(Aver.) 16%
II.	19%	24%	44%	29%	" 30%
III.	35%	42%	29%	41%	" 37%
IV.	28%	18%	11%	14%	" 17%
Total,	100%	100%	100%	100%	100%

Key to Grouping in above table.

Group I. Required Freshman Corrective work (Psychol. Dept.)

Group II. Required Sophomore speech classes (Speech Dept.)

Group III. Satisfactory; excused from speech requirement.

Group IV. Superior. Advised to elect while in college.

TABLE II. Showing percent of students in each group when all students are held for some requirement, except those with advanced standing in speech from other colleges. 1926-27.

	1926-1927	Aver.	Key to grouping.
Group I.	19%	11%	15% Group I. Corrective work.
Group II.	28%	46%	37% Group II. Required Freshman speech classes.
Group III.	48%	40%	44% Group III. May elect in any of upperclass years.
Group IV.	5%	3%	4% Group IV. Advanced standing in speech from other colleges.
Total	100%	100%	100%

TABLE III. Frequency table showing types of speech difficulty for which students have been held in Group I. Years 1922-25.

Oral inaccuracy and ineffective speech,	35%
Vocal peculiarity, hoarse, harsh, nasal, etc.	21%
Lisping	16%
Stutter, nervous hesitancy or speechblocking	11%
Foreign accent,	6%
Letter substitution,	5%
Provincial dialect,	3%
Deafness and oral inaccuracy due to same,	2%
Paralysis (associated with ineffective speech)	1%
<hr/>	
Total,	100%

Percentage is that of total number in *group I*, not percentage of entire Freshman class.

In one first grade tested by the writer the supervisor of kindergarten activities and a number of her teachers had taken a special course in Speech Correction and Child Psychology, and had secured appreciable results in clearing up difficulties such as lisping, oral inaccuracies and foreign accent, in a relatively short period of time.

Foreign accent is not usually considered as a "speech defect", but it is within the province of the grade teacher to eliminate it, and she should also *attempt* to secure clear-cut incisive enunciation from all of the children in her grade. In the Polish language, where the *th* (voiced and voiceless) is usually displaced by a *d* or *t* sound, some knowledge of phonetics is necessary that the teacher may show the child how to make the proper contacts in order to give the *th* sound, which is a lingua-dental, instead of the *t* or *d* sounds, which are lingua-rugal. The Polish child also gives

a *g* in addition to the *ng* sound in such words as *ringing*, and *going*, ("ring-ging" for *ringing*; going-g for *going*). Letter substitutions and minor inaccuracies of this type may be easily corrected in the first grades in school. A few moments a day, given by either special teacher or class room teacher to phonetic exercises, word and sentence drill, including the difficult sounds for the particular group of children dealt with are sufficient to aid children to replace undesirable speech habits by desirable speech standards.

The normal schools and colleges of this country should include speech correction and special courses in the psychology of language development as a part of the teacher-training requirement. This is done in many foreign countries. Early in the century Belgium, Germany, Switzerland and Denmark established special schools or special classes for the speech defective, with specially trained teachers to conduct this work.

Where defects exist in addition to those of speech, there seems to be a higher percentage of speech defects than we find among non-handicapped children. In a speech survey of the two largest state schools for the Blind, namely the Perkins Institution for the Instruction of the Blind at Watertown, Massachusetts and the Pennsylvania Institution for the Instruction of the Blind, at Overbrook, Pennsylvania, 48% of the total number tested could be properly classified in the speech defect group. The girls were in the majority, on account of the large number of cases of lisping among them. There were 59% girls and 41% boys in the total 100% (of those having speech defects) a ratio of 3 girls to 2 boys. Blindness seems to favor the hangover of infantile speech habits slightly longer among girls than among boys. In both, we find poorer

habits of posture, more passivity of the muscles of expression, less vital capacity and poorer habits of speech generally than in the public school population tested. It will be recalled that the ratio of speech defects is greater among boys than among the girls in the public school population.

Table IV summarizes the results of the speech surveys given in the Watertown and Philadelphia schools for the blind, 1923-25.*

Total No. examined.

Kindergarten,		Lower school,		Upper school,		Total all schools.	
Girls	49	Girls	30	Girls	135	Girls	214
Boys	55	Boys	42	Boys	93	Boys	190
Total No. Examined							404.

Total No. with speech defects.

Girls	30	Girls	28	Girls	61	Girls	119
Boys	23	Boys	17	Boys	42	Boys	82
No. with Speech defects							201

Speech is held to be one of the most recently acquired of the highly skilled performances of man, in his evolution from the lower to the higher type of nervous system. It is also one of the first skilled performances to show deterioration in instances where the mental development is below normal, or where disintegration of personality has taken place as among the insane. Studies of the speech of the insane furnishes a rich field for those interested in the study of the disintegration of mental processes. In manic depressive insanity when the manic phase predominates, one often finds a high "speech pressure", the individual talking

*Stinchfield, S. M. Speech Defects in Children. Amer. Associa. of Instructors of the Blind. 28th Bien. Convention, Proc., 1926, pp. 301-306.

incessantly for days or hours at a time. It is the quality of the speech reaction at this time which gives the psychiatrist important cues as to the cause of the disturbance, or to certain exciting causes which have become manifest in the symptom of speech pressure and excessive volubility.

Despite these high frequencies for speech defects in specially handicapped children, both teachers and the school psychologists state that the speech has improved a great deal since these children entered the state institutions. This holds both for the mentally deficient children and for those in the two schools for the blind. This improvement is attributed to the improvement in environmental conditions, improved hygiene, food, rest, recreation, and training. It is a part of the socialization process.

If speech training has thus been found to be effective among specially handicapped children, rendering them more efficient workers and yielding returns in increased happiness and satisfaction, then it is obvious that the public schools should do all in their power to remove the special handicap of a speech defect in the children committed to their care, in order to overcome this remedial handicap during the early formative years. The importance of this training has been sufficiently well stated and emphasized elsewhere, in books dealing with the handicapped child.

How may we call it to the attention of American educators in order that they may consider it in its economic and social aspects? How should we train a child suffering from any special handicap? There are several possibilities.

First: Educators should be aware of the fact that speech defects are on the increase in the civilian popu-

lation, due to the influx of many languages, varying social standards within the same language group, increase in nervous disorders, complexities in modern community life, and the greater nervous strain of the present day upon the child. We should seek agencies for the correction of these difficulties.

Secondly: It should be possible for the child with a speech difficulty to receive special and individual attention; otherwise he cannot progress at the usual rate in a mixed class of 20 or more children in the ordinary school room.

Third: A special case history study should be made, including medical and family history, social history, school progress, home environment, economic status, the psychobiological factors mentioned by Blanton and others in dealing with speech defectives,—character and temperament, interests and ambitions, nature of speech defect, diagnosis, prognosis, treatment and results. (5)

Fourth: A speech hygiene program should be given to each child and its parents, in order that the home may cooperate with the school in overcoming the speech difficulty.*

Fifth: Daily drill and speech exercises should be given to the child alone, or in small groups of children with the same handicap. Children with different defects need different treatment and should not be dealt with together.

Sixth: The personality of the teacher is an important element in effecting a cure. It is therefore important that normal schools should secure specially trained teachers to carry on this important branch of special service for the speech-handicapped child.

*See Speech Hygiene Program.

Seventh: Cooperation between various agencies and institutions is necessary to secure maximum efficiency, as has been shown by the work done in countries where a central institute has been established to deal with speech defect cases, or where all the work in a group of cities has been carried on under national or local educational supervision and where the training is a part of the recognized educational procedure. Reliable institutions do not usually "*guarantee*" cures to stutters or others, nor do they employ unscientific, haphazard methods, exacting a disproportionate fee for services rendered.

Eighth: It is known to physicians and laymen that a child possessing a physical handicap which is allowed to go uncorrected, usually cannot compete mentally or physically with a normal, robust child of good physique. It is the exception rather than the rule, for speech-defect cases to excel mentally or physically. The child with a speech difficulty tends to become morbid, introspective, suspicious, unsocial and even psychotic in his personality reactions. This decreases his efficiency as well as his economic value to the community.

*Speech Hygiene Program, For Daily Practise.**

I. Regular hours of sleep, nine hours or more per night. Retire at 8.30, if you are less than eighteen years old,—an hour later, as a customary thing, if you are older.

II. Try to go to sleep directly, with pleasant, cheerful thoughts. The easiest way to accomplish this, is to relax completely as possible, and to seek to become "drowsy."

*All of the above directions apply to practically all speech students, but numbers 13 and 14 are intended particularly for those who stutter.

III. Try not to become very much excited when you are talking. Cultivate habits of calm, easy speech, free from hesitation, "noises" and nervous mannerisms.

IV. Say to yourself, "I am not afraid; I know that I can make all the sounds in the English language. I will try to speak them easily and well."

V. Use pleasant, agreeable tones. Try to get out of a jerky, unrhythmic monotone in speech, if such is your usual way of speaking.

VI. Eat plenty of fruits and green, leafy vegetables when you can secure them. Avoid eating sweets to excess. Do not spend your allowance for candy.

VII. Eat slowly and masticate your food thoroughly.

VIII. Exercise each day out of doors for at least two hours.

IX. Keep a cheerful, pleasant attitude all the time.

X. Don't worry about your speech. It is worry which sends it off into a jerky, unpleasant utterance. Calmness and control of yourself, whenever you begin to speak, will give you easy, fluent utterance if you practise it often enough.

XI. Remember that it will take time to improve, but begin NOW to relax and make up your mind that you are going to conquer your speech habits rather than let them master YOU!

XII. Read "The Americanization of Edward W. Bok", and like him seek every possible occasion to improve yourself, to talk with interesting people, to take some of the social responsibility of each occasion upon yourself, and thus direct the development of your own personality.

XIII. Remember that an occasional hesitation is to be expected for some time, if you have stuttered for a good many years,—but *stop* the moment hesitation or jerky speech occurs and get a new grip on yourself; make a new and better start, without facial contortions, grimaces and “tied-up” muscle movements of head and shoulders. Be a self-starter, of the mental type; don’t let your hands and feet start the performance!

XIV. Relax, relax, RELAX! Speech should be easy and spontaneous. Call some of your friends on the telephone occasionally, or answer the calls whenever possible, until you can do this successfully. Boys and girls who stutter often have a strange fear of the telephone. Overcome this fear, realizing that it is easier to talk to some people over the telephone, than in the same room.

XV. Do not depend on some other member of your family to talk for you, thus assuming the social responsibility which should be partly yours. Be gracious and tactful enough to do your share, and try to do it easily and well. Self-consciousness is the bug-bear which most often makes us feel awkward and appear ill-at-ease.

Speech Hygiene Program For the Family.

I. Fathers and Mothers, — cultivate calm easy speech in your homes, and desire it also from every member of your family. Avoid nervous haste, hurry and excitement in talking. Seek to be reasonably deliberate in speech and to serve as a constant model of natural, gracious, easy speech, to your sons and daughters.

II. Quietly suggest that each child talk slowly and clearly at home.

III. Encourage the child to talk,—find things of interest for him to talk about, but insist upon good speech from the very start.

IV. Distinctness of utterance, careful manners, quiet, self-assured speech is to be held up to the child as an ear-mark of good breeding.

V. Insist upon good manners in little things, as the child passes out of the five year old period,—teaching children to wait upon you, to pull your chair or that of guests at the table, to allow you to precede, in entering a room; show him that you want him to do himself and the family credit, in a social way, both at home and abroad.

VI. If a child hesitates or blocks off in speech, or tries to talk too rapidly, stop him *quietly*, and ask him to begin again. Have him stop **AT ONCE**; do not let the stutter habit gain a foothold, if you can help it. Do not let him speak on an incoming breath; he should breathe in slowly and then speak on the outgoing breath.

VII. Help the child to overcome the “stoop-shoulder” habit. Cultivate erect bearing, obey the Posture Rules like good soldiers. Remember that we should carry the head erect, chest expanded, knees straight (not sagging in indolent fashion)—and hips well back. Do not let child sit for hours curled up in a chair, bending over a book. He can sit well if required to do so.

VIII. Help children to cultivate calm, cheerful dispositions, free from whining, nervousness, worry or mental strain.

IX. Practise bodily exercises and simple gymnastics each day.

1. Arm stretching exercises.

2. Head rotations, bending and flexions.

3. Freedom of shoulders (in arm movements).

4. Breathing exercises (without directing attention to the ACT of breathing or the muscles concerned!) Get at it indirectly through counting, phrasing, sentence building, etc. Work for smooth, easy responses, counting in groups of numbers, five counts on one breath. In this manner, count from 1 to 5, then 5-10; —10-15;—15-20; and 20 to 25.

Count to 50 in groups of 10 (10 to each breath).

Count to 45 in groups of 15.

Say the alphabet on one breath.

Read some short poem, being sure that you take a new breath for each line. If this is too difficult, take a new breath for each phrase, speaking slowly and distinctly.

Articulation Test.

On following pages are given 34 sentences, each containing three sounds to be checked or credited, with the exception of the last sentence which contains only one sound to be checked. The score is 100: or 33 times 3 plus 1 (for the final sentence) Total 100 points.

Score yourself or ask observer to check you, using the accompanying check sheet for same. The sentences here given contain all the Sounds of English as listed in the International Phonetic Association alphabet, with a few additional consonant combinations, making a total of 100 possible points. See footnote for information regarding additional testing material.*

*Used by courtesy of C. H. Stoelting & Co., Chicago, Ill., publishers of Blanton-Stinchfield Speech Measurements, Graded Series, Grades I-VIII, and Adult Tests.

<i>Sentences.</i>	<i>Test sounds.</i>		
1. He could not adhere to the whig plan.	h	h	wh
2. He fell, baffled off the cliff.	f	f	f
3. You have a good view of the river, from the cove.	v	v	v
4. Can you bring the basket at eight o'clock?	k	k	k
5. The girl was dragging a heavy bag of potatoes.	g	g	g
6. The monk was ringing the gong.	nk	ng	ng
7. Pick the apples when they are ripe.	p	p	p
8. He brought the rubber ball for Rob.	b	b	b
9. The mob heard the rumbling of the drum.	m	m	m
10. Try to bail the water out of the boat.	t	t	t
11. I did not wonder at the deed.	d	d	d
12. He brought us some nuts and a candy cane.	n	n	n
13. The child was scratching a match on the chair.	ch	ch	ch
14. Jack put the toy engine on the bridge.	j	j	j
15. She was washing that dish.	sh	sh	sh
16. The tape measure is brown and gilt.	br	zh	lt
17. I saw the basket of lace.	s	s	s
18. Zero is called the freezing point.	z	z	z
19. Walter was away last Christmas.	w	w	kr
20. Have you read the news about the flight?	y	ew	fi
21. This is the leather with the smooth finish.	th	th	th
22. I think the author's name is Smith.	th	th	th
23. The ladder was taken from building to the wall.	l	l	l
24. Right near the tree it stands.	r	(t)r	-ear
25. Over there is a flower.	ou	-ere	ow
26. He could see that the apple was bitten.	ēē	ă	ī
27. He came and brought the wire for our radio.	ā	-ire	our
28. The bird hovered over the water.	ə:(ir)	(hover)	aw
29. The poor child was looking for a star in the book.	-oor	a:	ōō
30. The boy did not come soon enough.	oi	ō	ōō

- | | | | |
|---|-----|------|----|
| 31. I can see the squirrel, scrambling and
scolding. | skw | skr | sk |
| 32. The fly alighted near the cup. | l | -ear | ũ |
| 33. Hugo met with a troublesome fate. | hy | ě | tr |
| 34. Give me the glasses, please. | gl | | |

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